THE JOURNAL

OF THE

Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

Vol. XXVI NOVEMBER, 1927 No. 11

ORIGINAL ARTICLES

SUBSTITUTE OPERATIONS FOR ENUCLEATION OF THE EYEBALL WITH SPECIAL REFERENCE TO AUTOGENOUS CARTILAGE TRANSPLANT

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Historical: Proper enucleation of the eyeball was first performed by Bonnett in 1841. Previous to this date very little attention was directed to the anatomical structures connected with the eyeball, and the operations for the removal of this organ, were for the most part performed by surgeons who were more or less unfamiliar with ophthalmology. Bonnett[1] based his operation on the study of the anatomical structures surrounding the eyeball, especially what we know as the capsule of Tenon. This capsule is also called, in his honor, Bonnett's capsule. Enucleation, as practiced today, consists of detaching the conjunctiva from its insertion at the corneal scleral junction and the dissection of the conjunctiva from the globe until the recti tendons have been reached. These are detached in turn from the sclera. The capsule of Tenon is then further entered and completely separated from the globe by blunt dissection until the optic nerve has been reached. The optic nerve is then severed, usually with scissors curved on the flat. The tendons may or may not be stitched to the opposite side. This depends on the opinion of the different operators. However, a purse string suture is commonly used to approximate the conjunctiva. No attention whatever is paid to the extra-ocular muscles or to the anterior orbital fascia or tarso-orbital fascia and the cheek ligaments, which anchor the eyeball in its position in the outlet of the orbit. This operation as commonly practiced today by opthalmologists is directly attributed to the ideas of Bonnett although others attribute the origin of the modern enucleation to Farrett in 1841. Choberey described a similar operation in 1826.

THE INDICATION FOR REMOVAL OF THE EYE

To this, I shall only briefly refer. Only those eyes which have no claim to be considered as organs of vision but require surgical treatment either for relief of pain or for the removal, in whole or part, of a damaged organ which if untreated might prove a source of danger to the possessor —either from sympathetic ophthalmia or infection, should be removed, etc. The question of the best and safest cosmetic operation to cover removal of an eye has been extensively discussed, especially during the late war, as wounds of the eye formed an extraordinarily large proportion of total injuries. The relative value between enucleation and its substitute is still not settled in spite of the discussion, but in general ophthalmic surgeons agree that the eye should not be removed without some attempt by a substitute operation to give the individual a movable stump so that the prosthesis or artificial eye will rotate.

A brief classification of substitute operations which have been advocated from time to time may be listed as follows:

Group 1. Those which consist in re-

moval of the entire globe followed by implantation of some substance in the cavity of the capsule of Tenon.

Group 2. Those in which the whole or some portion of the eyeball is retained. Under this classification are those (a) without implantation and (b) those in which some substance is implanted within the fibrous coats of the eyeball.

In the first group belong the following:

1. Filling the sac with paraffin after the contents of the eyeball have been eviscerated—after the method of Sucher[2] Ramsey[3] and Spratt[4].

2. Turning a piece of integument either from the lower lid—Maxwell's[5] operation or from the temple—Cross's[6] operation.

3. Inserting glass or gold sphere—Frosts's[7] operation.

4. Inserting a rabbit's eye—Chibret's[8] operation.

5. Inserting a mass of fat—the operation of Prof. Berraquet[9] of Barcelona, Spain.

6. Inserting a circular piece of skin from the deltoid region after the method of Rallet[10].

Many other substitutes have been used but fat, glass and gold balls and cartilage give the best results.

To the second group in which some or the whole of the eyeball is retained belongs the following:

1. Optiociliary neurectomy — Boucheron[11].

2. Anterior amputation with retention of a part of the contents of the globe after the method of Crichett[12].

3. Mule's operation which consists in the removal of the cornea from the globe and the removal of the contents of the eyeball, and following this the insertion of a gold or glass sphere in the scleral envelope and suturing the sclera over it; after which the conjunctiva is approximated in the opposite direction.

4. Dimitry[21] of New Orleans has apparently a very valuable modification of Mule's operation. His operation consists in the removal of the posterior pole of the eyeball including the section to which is attached the optic nerve. The cornea is also removed. In this procedure the extra-ocular muscles are not disturbed. A gold or glass sphere is placed in the scleral envelope, and the remainder of the operation is completed after the method of Mules.

It is to be noted that ophthalmic surgeons have long endeavored to find a suitable procedure which would give a better cosmetic appearance following enucleation of the eyeball than could be secured by the simple enucleation as above outlined, but of the various methods which have been advocated from time to time—many of these are not based on sound reasoning, especially the one in which the rabbit's eyeball is implicated. Frost's substitute, which is glass or gold, sooner or later in many cases gives rise to irritation after which the sphere, acting as a foreign body, is expelled. However, in many cases, especially glass or gold give rise to little or no irritation and give an excellent result. Of the percentage of failures I can find no definite statistics, but a rough estimate would be about 25 per cent.

The scope of this paper will include only those most worthy of consideration in the light of modern surgical procedures. To return again to the ordinary enucleation, this operation gives three highly unsatisfactory and undesirable results from the cosmetic view point, namely:

1. *Deeply sunken eye socket*—Which is due to atrophy of fat with displacement of anterior orbital or tarso-orbital fascia. A sunken eye socket gives marked assymetry with the opposite side. In young children simple enucleation gives rise to marked assymetry of the head and face as a result of failure of this side of the head to grow in accordance with the other side.

2. *Sagging of the upper eyelid*—This is due to absence of orbital fat and the stretching of the anterior orbital fascia and the obliteration of the retro-tarsal fold.

3. *The artificial eye stares rigidly and vacantly into space.*

The above undesirable results lead ophthalmic surgeons to seek methods which would obviate this poor cosmetic appearance. We consider the three following procedures the best of all that have been devised.

1. Gold or glass ball implant—In 1884 Mules, an ophthalmic surgeon, was so dissatisfied with the cosmetic appearance following operations of previous surgeons that he proposed to place a hollow glass sphere in the empty scleral sac to make a prominent stump for the artificial eye. His method, with slight modifications, remains one of the best cosmetic operations, but as previously stated there are dangers and failures. The operation, as usually done, is attended with severe reactions locally with pain and swelling and the glass ball is frequently extruded and oc-

casionally is a source of danger to the other eye from sympathetic ophthalmia[21]. Dimitry's modification, I believe, would greatly obviate much of the difficulty met with in the operation of Mules in that the posterior window in the scleral envelope permits the serous exudate, resulting from the presence of the foreign substance in contact with the sclera, to be absorbed by the orbital tissue. In this way the danger of extruding the sphere by the pressure of the exudate would be less. Dimitry claims that there is little or no danger from sympathetic ophthalmia, and he also claims for it that it furnishes a filled-up eye socket with its several advantages and a firm seat for a prosthesis. He also states that there is absence of sagging of lids and hence normal lacrimal secretion and drainage. He does not believe that his operation interferes with the development of the face when enucleation has to be done in childhood. He also claims that the recti muscles are undisturbed and the retro-attachment of the conjunctiva furnishes a deeper retrotarsal fold which permits unrestricted excursions of the prothesis.

2. Fat transplant—The operation of Prof. Barraquer[9] of Barcelonia, Spain, which consists of a transplant of a mass of fat from the abdominal region into the capsule of Tenon, is one widely used by many ophthalmic surgeons and many excellent immediate results are reported from this operation, but unfortunately after a period of time considerable atrophy of fat takes place and a less favorable cosmetic appearance results.

3. Costal-cartilage transplant — In 1912, the costal-cartilage was first suggested by Sallter, a German, but references in literature are very meagre, only a few can be found. Capt. Aymard[13], an English surgeon, published in 1917, his modification for the obtaining of costal-cartilage, but gives no results of his operations. His published technique does not include suturing the recti muscles and only includes the suturing of the conjunctiva over the cartilage.

Magitot, a French ophthalmologist, during the late war suggested the use of ox cartilage as an implant. The cartilage is taken from young oxen and was kept in 65 per cent alcohol. Now Magitot keeps the ox cartilage in 10 per cent formalin solution, and at the time of the operation the cartilage is steamed, sterilized and cut down to one-half the size of the eye to be enucleated and then inserted into the capsule of Tenon. I have been unable to secure information as to the percentage of results. However, an idea of the general results may be obtained from papers published in 1922 by Donald J. Lyle of Cincinnati, Ohio, who did five operations after

Illustrating Dr. W. T. Garretson's article on "Rib Cartilage Transplant to the Eyesocket Following Enucleation."

Magitot's method before this date and gives the results in the five cases, as follows: In the one the cartilage had to be removed on account of pain nine months later. The remainder of the five have given excellent results to date, one or more years afterward. It is interesting to note the histological report of the cartilage which had to be removed. This is the only reference in literature to microscopic histology of any of the cartilage transplant which had been reported. The author notes that removal was quite difficult owing to the close penetration of the cartilage by the orbital tissues. The histological picture showed cartilage for the most part uninjured, but showing connective tissue in growth with blood vessels. Along the edges of the specimen there are a few small areas of bone formation. Dr. Malone, Professor of Histology at the University of Cincinnati, made the diagnosis on the specimen as tissue necrosis with fibrous infiltration and with beginning bone formation and further observes in the removed insertion the following changes:

1. The original unchanged cartilage.
2. Necrotic cartilage.
3. Calcification.

He further notes that had the tissue remained it would probably in the course of a year changed into true bone. (This, however, would give the pathologists and histologists food for thought as to where the osleoblasts would come from which would produce the true bone.)

Like many other surgeons, we were dissatisfied with the poor cosmetic result following simple enucleation and the thought occurred to us that *autogenous cartilage graft* could be used with comparative safety providing our technique in the operation was satisfactory. The operation, which we are doing, is as follows:

A local anesthetic of 2 per cent novocain with two drops of adrenalin to the dram is used; blocking the first division of the fifth nerve at the apex of the orbit or by injection into the capsule of Tenon or by blocking the ciliary ganglion filaments. We more frequently do this than blocking the first division because it is easier and gives satisfactory results. Novocain ½ per cent with two drops of adrenalin to the dram is injected into the skin and deep tissue along the cartilage to be removed.

The cartilage is first procured by exposing the sixth, seventh, and eighth costal cartilages, preferably on the right side, taking about one and three-quarters inches of the full thickness of the sixth cartilage without regard to the perichondrium. This is cut into two pieces and the edges rounded off so that they will fit well into the capsule of Tenon. These are then placed into warm physiological saline until the eye is enucleated. The latter is now carried out as follows:

The conjunctiva is detached from the corneal-scleral junction and the capsule of Tenon is dissected free from the anterior part of its attachment to the eyeball. Each rectus muscle is picked up with tenotomy hook and its tendon is fixed by means of through and through circular knot with triple O catgut ligature introduced with needle, and the ligature is then firmly tied leaving both ends long. The scleral insertion of the tendon is then severed, incorporating some of the scleral fibers of its attachment. The remaining recti tendons are then treated in a similar manner and the oblique tendons are severed without regard to their attachments. The capsule of Tenon is then completely detached from the eyeball and the optic nerve is severed as in simple enucleation. The hemorrhage is then controlled by hot saline packs.

The two pieces of cartilage are now placed into the capsule of Tenon, one behind the other. The two ends of the ligature of the superior rectus are then threaded and the needles are then introduced into the capsule of Tenon to each side of the inferior rectus tendon and brought through into the conjunctival sac well away from the free margin of the conjunctiva. Similarly the inferior rectus sutures are introduced about the superior rectus muscle and through Tenon's capsule. Likewise, the external and internal recti muscles are similarly fixed. A purse string suture is then introduced and when tied approximates the cut margins of the conjunctiva. Before the final tie of this suture is made a rubber dam drain is placed in the remaining opening. This permits of escape of the serous exudate for the first twenty-four hours, after which it is then removed. The postoperative treatment consists of cleansing with boric acid solution and 10 per cent argyrol. After a period of three to six weeks an artificial eye may be worn. It will have to be a temporary one as the orbital tissues readjust themselves in such a manner that the artificial eye no longer fits. In these cases the artificial eye should be made to order as the stock eye does not fit very well in this eye socket.

Twenty-six cases have been operated in

the above manner since 1923. None have had to be removed on account of any sort of irritation. Two were removed because of suppuration. One was due to a break in operating room technique since the rib incision was infected as well as the socket. The second was probably infected as a result of a pyo-ophthalmitis in which the laceration extended into the sclera thus carrying bacteria into the capsule of Tenon.

As to the final results—time only will give the true worth of these efforts, but the writer's immediate results in this operation are as follows:

1. Full socket with symmetry with its fellow.
2. Non-dropping upper lid.
3. A fair range of movement in the prothesis in all directions.
4. A non-staring eye.
5. Improved lacrimal drainage as compared with simple enucleation.
6. The possibility of building a socket where some infected globes will not permit a Mule's or Dimitry operation.

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HEALTH FINDINGS IN CHILDREN OF SCHOOL AGE—2,989 EXAMINATIONS

(Dubois Health Center Demonstration of the Tuberculosis Society of Detroit, Wayne County)

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DETROIT, MICHIGAN

Having completed the examination of 75 per cent of the children of the school age in this area, we now feel justified in giving our findings as representative of that group. Also, since this area is as near a cross section of the City of Detroit as it is possible to get, on a basis of 25,000 population, it is fair to assume that our report represents a true picture, with minor corrections, of course, of the city as a whole for the ages of 6 to 15 inclusive.

In addition to the examination of the 2,700 children of this area, 1,500 more children were examined in the Wayne County rural schools, giving a three fold study of children in public, parochial and county schools. For purposes of comparison, the figures of the parochial school are again cited. (1).

The public school examination of 1,023 pupils was carefully carried out and on the same principles as that in the parochial school (with an additional 135 new pupils in the latter), all the examinations being performed by one of the writers (D.S.B.)

On the basis of the von Pirquet skin results, the public school shows a higher percentage of tuberculosis infection than the parochial school, giving us the data in Fig. I as the average in that age group for our demonstration area. In the parochial school the percentage positive of all children given the von Pirquet test (1,184 children) was 32.2, while in the public school it was 41.81 (484 children tested). Of the contacts, those exposed for a continued period to open cases of tuberculosis (sputum positive for tubercle bacilli), the parochial school gave 65.2 per cent positive reactions as against 75 per cent in the public school. Likewise, the positive of the non-contacts was 30.9 per cent and 37.5 per cent respectively.

Dividing the contacts into two groups general 4 and 5 (under nourishment and under-development), and general O-3 (within normal limits), the general 4 and 5 in the (2) parochial school gave 75 per cent positive von Pirquet reactions and the public school 100 per cent. The general O-3 in the two groups gave 63.0 and 70.6 per cent positive reactions respectively. Of the children in the two schools who were non-contacts, the general 4 and 5 group in the parochial school gave 47.6 per cent positive reaction and 57.69 per cent in the public school. Again, of the general O-3, the von Pirquets were 28.6 per cent and 37.03 per cent positive respectively. It is of interest for future preventive work that we were able to obtain von Pirquet test permission in 77.7 per cent of the parochial and but 47.2 per cent of the public school children.

The linear diagram (Fig. 2) gives the general 4 and 5 of the three groups according to age. There is in all three lines a

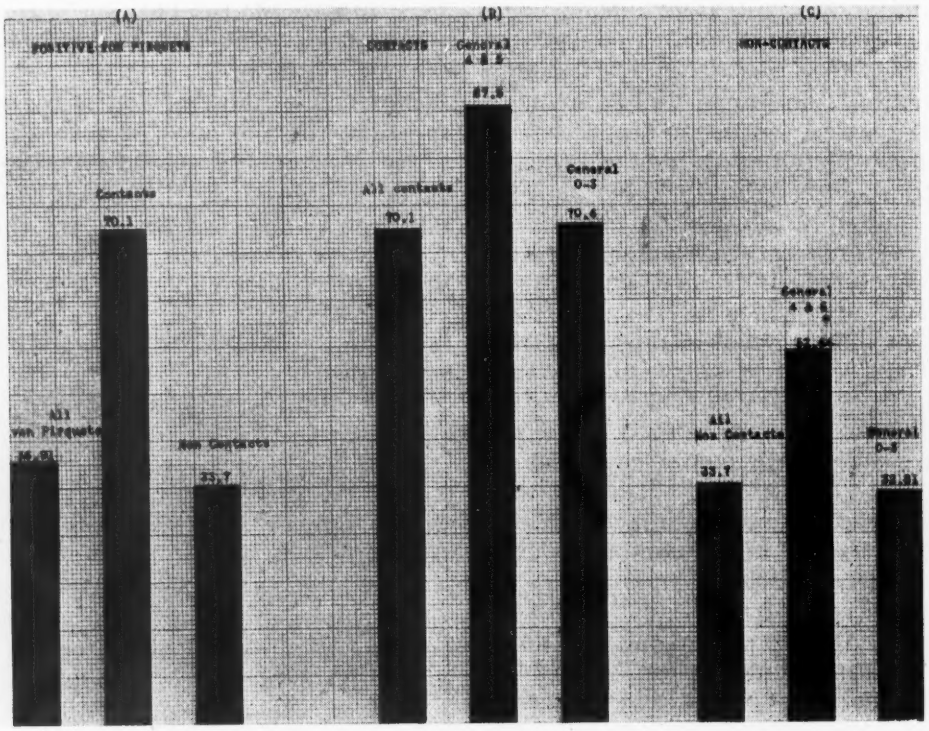

Figure 1

Showing the percentages of positive von Pirquet reactions in school children of the area (A) contact and non contacts. The contacts (B) and non contacts (C) are further divided into normal and abnormal nourishment and development groups.

GENERAL 4 and 5

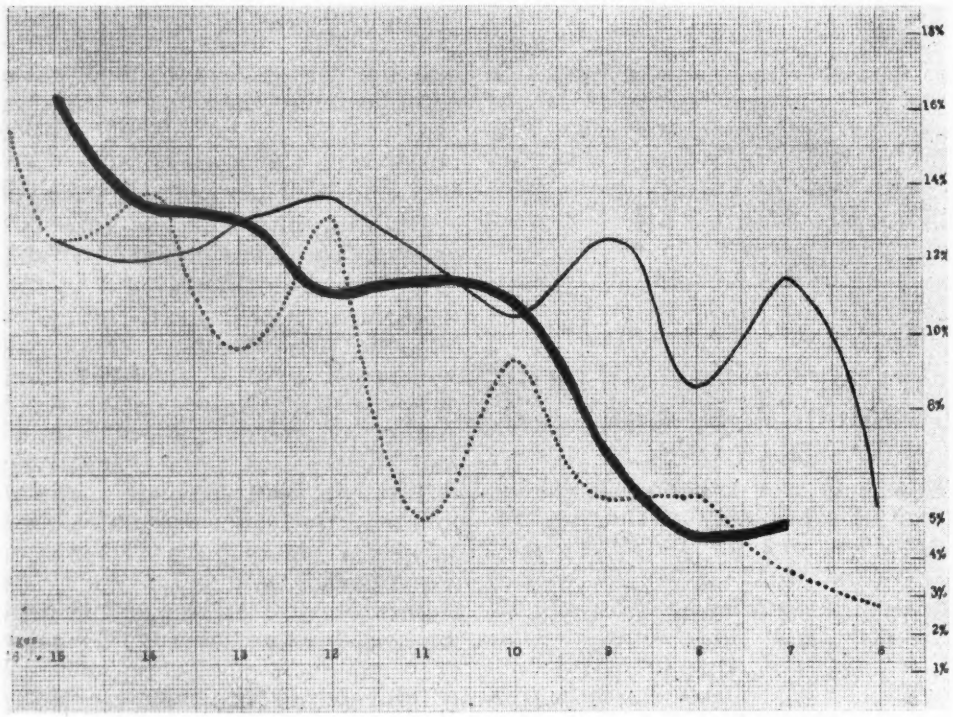

Figure 2

Undernourishment and underdevelopment in 1542 children of parochial school ▬▬, 1023 of public school———, and 424 of county school......, in age groups.

tendency for progressive increase in percentage of general 4 and 5 from six years upwards. The public school line rises suddenly after the six-year period with its actual height at the age of twelve, but the trend is distinctly progressively upward,

though the differences from age seven upwards are slight. In the parochial school, there is a definite progressive increase of general 4 and 5, each age group, with only two very slight exceptions, being definitely greater than the preceding one. The county school group shows a comparatively low percentage up to and including age eleven. There is then a sudden marked rise at the age of twelve with the height

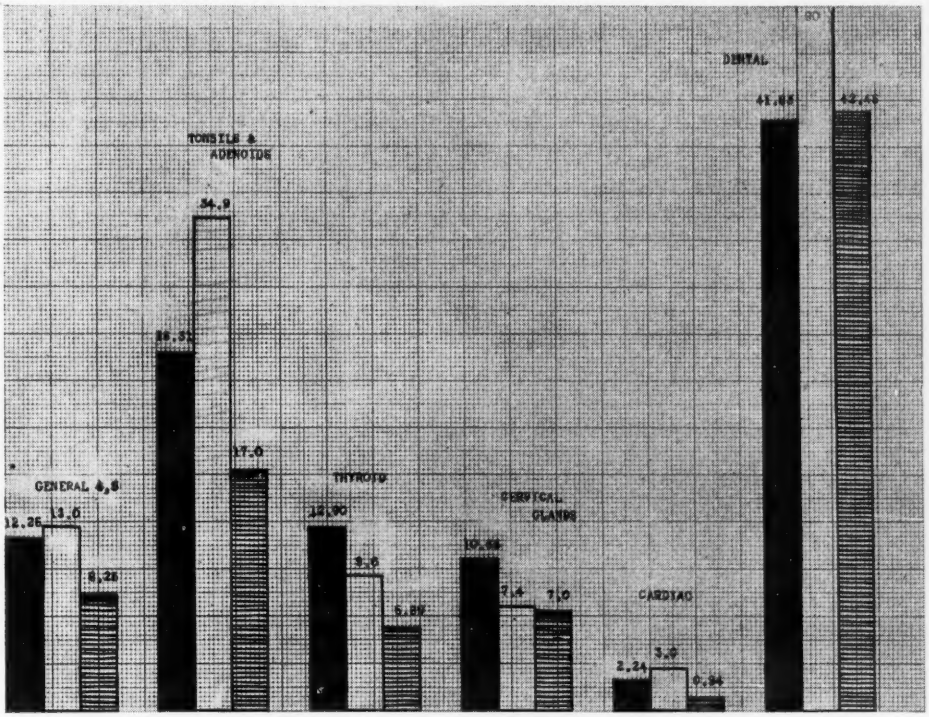

Figure 3

Showing correction percentages recommended in ▬ public school, ▭ parochial school, ▤ county school.

CORRECTIONS 2989 CHILDREN

	General 4 and 5	Tonsils and Adenoids Operations			Thyroid		Cervical Glands		Heart		Dental		von Pirquet	
Parochial School 1542 children		4	5	00	4	5	4	5	Disease	Obs.	4	5	Pos.	Neg.
	201 or 13%	365	536 or 34.9%	196 or 13.4%	138	10	100	14	46 or 3%	25 or 1.6%	90%		386 or 32.2%	812 or 67.8%
					148 or 9.6%		114 or 7.4%							
Public School 1023 children	116 or 12.25%	313	259 or 25.31%	162 or 15.83%	126	6	102	7	23 or 2.24%	15 or 1.46%	72	356 or 34.8%	201 or 41.61%	282 or 58.39%
					132 or 12.9%		109 or 10.65%				428 or 41.83%			
County School 424 children	35 or 30.1%	108	72 or 17%	49 or 11.55%	22	3	63	3	4 or .94%	4 or .94%	111	69 or 16.27%	Not tested	
					25 or 5.89%		66 or 7%				180 or 42.45%			

Figure 4

level practically persistent to the age of sixteen, the older age children being in the high school.

The comparative percentages of the various corrections recommended in the parochial and public school children as well as in those of the county rural schools are given in Figs. III and IV. The public school excels over the other two in the matter of gross dental corrections required. The county schools give a lower percentage of corrections in all but the dental. However, in investigating further and considering the dental as 4 and 5, the 4 group chiefly requiring fillings only and the 5 group extractions, we get a different picture.

Of the 428 pupils 41.83 per cent requiring dental corrections in the public school, 356 or 34.8 per cent were number 5 (requiring extractions) as against 72 in the number 4 group. On the other hand, in the county schools, there were but 16.27 per cent requiring extractions in the total of 42.45 per cent so that in reality the dental condition of the county school children group is much superior to that of the public school group. Thus our study points as a whole to better physical condition in the county school children examined than in either the public or parochial school, in every phase.

Arrangements made for dental work in the parochial school (90 per cent corrections) will certainly result in a greatly improved picture for the future. The county children examined, in every instance, were members of schools under the care of health nurses (at that time members of the American Red Cross and recently under the township) and our figures show conclusively that better physical results follow such school health supervision.

Operation for tonsils and adenoids has been recommended only in those children with number 5. The writer does not believe in indiscriminate removal of all enlarged tonsils and followed practically the same principles as laid down by F. M. Meader, Detroit Board of Health. It is advisable to say at this point that the results fully justified this procedure. In the figures for heart disease there is little difference between the two city groups, both, however, being distinctly higher than the county group.

The percentage for cervical glands enlargement in the public school is 10.65 per cent as against 7.4 per cent in the parochial. The positive von Pirquet reactions in the total of public school children form 41.61 per cent and 32.2 per cent in the parochial. It will be noted that the proportions are very similar and one can safely deduct that at least part of the greater number of positive von Pirquet in the public school results from infected, if not active, cervical glands. A further important reason for the higher percentage of positive von Pirquets in the public school is the presence of negro children, these giving 31 positive in 58, or 53.44 per cent.

In this demonstration area, the parochial school children lead those of the public school in thyroid, cervical glands, and positive von Pirquet results, while the general 4 and 5 show very little difference, less than 1 per cent in favor of the public school. There is, however, definite differences in favor of the public school in tonsils and adenoids, in teeth and slightly so in heart disease.

The two open air rooms, part of the public school studied, contain 77 pupils. The results in this group are given separately in Fig. V. It may be noted here that these open air rooms particularly, as well as open window rooms, are invaluable assets to a large school and should form part of all schools having an enrollment of 1,000 or over. In the county, too, these open air rooms would soon justify their installment, as has been shown very conclusively in the city, there now being 33 in Detroit. Of the total of 77 children, but 23, or 29.87 per cent (less than one-third of all) were general 4 and 5, this being slightly more than double that found ordinarily in the schools. Amongst the pupils we found asthmas, healed hilum foci, cervical gland involvement and anemias, in addition to many contacts of open tuberculosis. Taking the results as a whole it is apparent that in order to comb the schools of children having certain apparent or latent diseases, it is necessary to make a thorough physical examination, inspection alone being useful only to a very minor degree. When properly arranged and managed, the continued fresh air, proper nutrition and rest periods of the open air routine are invaluable for many physical disabilities. Open air schools result not only in curing of many early diseases and preventing others, but also prevent many economic breakdowns of later life with the consequent loss to the individual, the family and the state.

The pupils in this area requiring corrections are followed up from year to year

with continued pressure being brought to have the corrections carried out. More often, however, it is found necessary to have the required treatments arranged for by the Center, a great deal of explaining and coaxing resulting finally in permission being granted. It is an outstanding fact that sending a slip with recommendations home for the parents' information produces very little action.

in the other four being very good. The contact history, too, was negative. The oldest child was then requested to attend the clinic preliminary to a home investigation. On further detailed questioning we ascertained that two people with open tuberculosis lived with this family over a period of eight months.

This is a negro family and since the Metropolitan Life Insurance Company

OPEN AIR SCHOOL

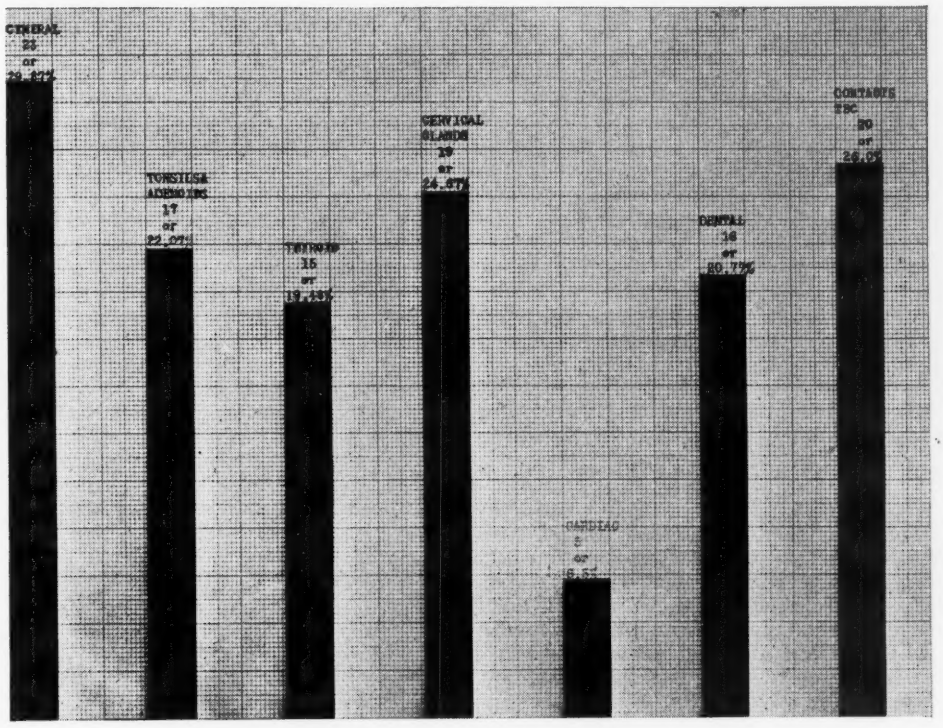

Figure 5

Correction percentages recommended in the Open Air School—two rooms containing 77 children.

This year arrangements have been made for the graduating classes of the two large schools in the area to receive a final thorough examination, including exact testing of sight, hearing and observations on color perception. A certificate of good health will be issued to those found normal, a duplicate copy being obtainable on request by reason of requirements in further studies, in industrial fields, etc.

Concluding, by thorough examination as here shown, we are able to greatly lessen the loop through which pre-tuberculous children escape us. Let us cite a specific example: In the recently finished public school examination we found that five of our positive von Pirquets were members of one family. Of these five only one showed under-nourishment and underdevelopment and then but to a slight degree, the results of physical examination

records show that the negro tuberculosis death rate in the industrial group is more than three to one of that in the whites, it is apparent that ordinarily several of this family would fall victims to this disease. Our preventive work, however, starts practically at once for they will all be recommended to the City of Detroit summer camp (Wm. H. Maybury Sanatorium, Northville), living in the open air and exposed to natural sunlight (with the minimum of clothes) for two months. On their return to school next season they will be in the open air rooms, getting proper rest, fresh air and wholesome food. On graduation they will be helped in further education or training for jobs that will not later expose them to the trials and tribulations of unsuitable labor.

We wish to express our marked appreciation of complete co-operation from the

Board of Health, Public Welfare Department, and Education Department of the City of Detroit, the executive heads of local parochial and public schools and all the other public and private organizations with whom we came into contact, without exception.

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2. Physical findings were graded as (1) being the so-called standard normal, (0) being better than the standard, (2) and (3) within normal limits, and (4) and (5) abnormal. In undernourishment, other factors being equal, within 10% of standard weight was considered within the normal.
3. Copies of descriptive classifications and recommendations are procurable from the Detroit Board of Health.

HYDRONEPHROSIS—CASE REPORT

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The following case is, I believe, worthy of presenting, illustrating as it does, a tetrad of factors in sequence in the production of ureter block with resulting upper urinary obstruction, back pressure with renal tissue atrophy and hydronephrosis.

Patient, well nourished male, 23, married, presented himself at this office for examination, February 11, 1927. Family history, negative. Usual diseases of childhood. Otherwise well until three years ago, when he contracted Neisserean urethritis which lasted about eight months, during which time there was no epididymitis, but definite posterior involvement. Since his apparent cure, there has been no recurrence of his infection. Four months following termination of his urethritis he had an attack of sharp pain in the left lumbar region, which radiated to the groin. This attack lasted for about four hours and was relieved only by morphine. He has had several similar attacks during the past two years but has noticed that every one, including the first, followed immediately in the wake of a drinking bout, each one growing in duration and intensity, the last of which having continued for three days.

Physical examination reveals nothing of note, with the exception of the elicitation of slight tenderness in the region of the left kidney. No definite mass can be palpated. The prostate is slightly enlarged and firm. It is slightly irregular over the left half and the left vesicle is fibrotic. Massaged fluid shows pus, mostly in clumps. No bacteria are seen in the stained specimen. Urine is negative but for small pus content. Blood pressure, 122/78. Blood N.P.N., 24.4 per 100 cc. Wassermann, negative. Cystoscopy reveals a normal bladder with a good functioning right ureter but no flux from the left. Indigocarmine appears from the right ureter in deep concentration in four minutes. None is seen from the left in fifteen minutes' observation. No. 5 X-ray catheter passes to the right kidney pelvis without obstruction. No pus in urine from right kidney. Impassable obstruction was encountered four cm. up the left ureter. Several attempts were made to pass this point without success. A Blasucci spiral tip catheter was introduced as far as possible and a pyeloureterogram, as illustrated below, was obtained.

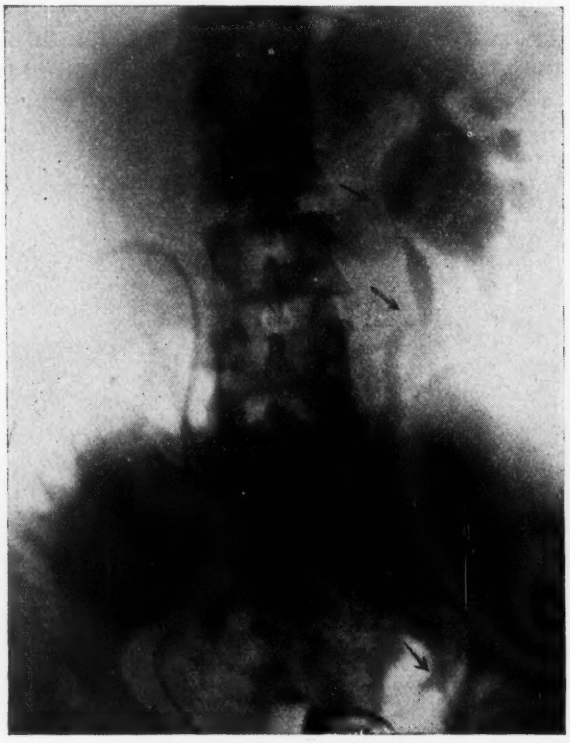

Fig. 1

Pyeloureterogram showing three constricting areas, kink from vessel and hydronephrosis.

Patient was allowed to go home, and in a few hours suffered further pain, which he said was similar to the attacks following drinking parties of the past two years. The usual signs of upper urinary infection supervened and he was transferred to the hospital, where examination revealed a tender mass in the left lumbar region. Mercurochrome 220, 50cg. was given intravenously in 25cc. of 50% glucose solution, eight hours following which, the temperature dropped to and remained at normal, the mass decreased in size and tenderness, the pus content of the urine diminished and the patient improved rapidly. The blood pressure and N.P.N. content were normal and operative intervention was instituted February 21st.

Under paravertebral anesthesia, the left kidney and upper third of the ureter were exposed. The kidney was hydronephrotic, with advanced extrarenal dilatation. There was a definite constriction of the ureteropelvic juncture. A large lower polar artery crossed the ureter anteriorly, just above the termination of the upper third, apparently a stem from the aorta. This vessel was ligated and divided; the ureter was treated likewise and cauterized. The patient was given a slight amount of ethylene while dense adhesions were removed from the hilus, the regular vessels ligated, and the kidney removed with the upper third of the ureter. The wound was closed in two layers with drainage. Recovery was uneventful. Although warned as to the dangers of excessive use of alcohol, he is quite pleased to be free from the "day after" pain of the past two years.

COMMENT

Too often do we overlook the primary as well as the secondary etiological factors in the production of a hydronephrosis. Here is a young individual with four cardinal reasons for his kidney destruction, three of which could be considered primary. Take away all but one, and he would still have been destined to calectasis or pyelectasis. 1—Congenital narrowing of the ureteropelvic junction. 2—Large vessel compressing the ureter. 3—Stricture at seminal vesicle relation of ureter as a result of intrinsic or extrinsic infection sequelae following upper genital in-

Fig. 2
Specimen injected. Great extrarenal and intrarenal dilatation. Pyeloureteric constriction and lower polar artery to right.

fection three years ago. 4—To hasten the process, and to cause immediate symptoms at intervals, the increased secretion of a large amount of urine of low salt and nitrogenous content as a result of response to alcohol was enough to cause immediate overdistention of the blocked hollow viscus with the characteristic resulting colic.

Secondary factors so well illustrated here are: tilting forward of the tumor mass due to gravity, increasing the vessel compression of the ureter; the usual failure of compensatory dilation of the ureteropelvic juncture, due to its characteristic construction; and the presence of normal thickenings of the perirenal fascias as well as inflammatory adhesions which acted to further contribute to obstruction and hydronephrosis.

Fig. 3
Roentgenogram. Injection of kidney pelvis under pressure, showing thinning of cortex and medulla. Catheter in situ. Probe indicates direction of aberrant artery.

THE BEHAVIOR OF CHILDREN IN RELATION TO MEDICAL TREATMENT

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Books, articles, pamphlets describing, studying and explaining the conduct of children have increased in number during the last ten years. The way children act has become of intense interest. Because of the increasing complexity of modern life and the necessity for instilling additional inhibitions in the course of the education of the plastic mind of the child, some of these problems have been presented to the attention of the physician. A fund of exact knowledge concerning conduct is rapidly being accumulated. This knowledge has

attracted not only the attention of educators but also of legislators who have promoted legislation to conserve the welfare and train the young so that they may develop the right type of social consciousness which will be of the utmost benefit to the future of the state. Prevention has become the keynote of this widespread movement which has as its aim the improvement of the physical and mental condition of childhood in its relation to the growth of the self, the family, the group and the state.

Obviously the physician in his close association with family life has the opportunity in many instances for aiding in the regulation of behavior in children. It is becoming increasingly necessary that the pediatrician must also be a psychiatrist. Each disease in childhood has its definite psychoneurotic element with which the disease itself is so closely interwoven that the two elements can not always be separated. More often the relationship is not appreciated. If it were appreciated there would be fewer neurotic children and in consequence fewer adult neurotics to crowd our institutions and increase the ranks of medical religious sects.

It is important to remember that the child is not a miniature adult, but that he is an individual whose diseases and development are characteristic only of that period of life. A child's nervous system is undeveloped, unstable, poorly controlled, and over-sensitive to external stimuli and subject to very rapid changes.

Methods of treatment must obviously be altered to meet these conditions, and the psychic condition of the child considered before any type of therapeutics is undertaken.

To further prove the truth of this premise, I wish to cite several instances of such neurotic elements which might have led to an entirely different type of continued treatment if not so appreciated.

1—Junior F. was a boy of eighteen months, a twin, the smaller of the two, but a well developed, well nourished infant. This case was brought to the attention of the physician because, at a regular time between ten and eleven p. m., after having been put to bed, he would begin to cough, rise up on his hands and knees, and eventually vomit his evening meal. He had continued this process with great regularity for the previous three months. He never vomited at any other time during the day, except at occasional intervals after a fit of temper, when prohibited from carrying out what he wished to do. Upon physical examination no cause was elicited for this vomiting. His feeding was considered satisfactory for his age. After vomiting in the bed each evening, he was accustomed to cry very loudly for his mother to come and clean him up, after which he lay down and slept well the rest of the night. In conference with his mother, it was decided to abate this nuisance by allowing him to lie in his vomitus, upon its next occurence. His mother was very co-operative, and upon the next occasion, in spite of his cries, allowed him to lie in this manner during the rest of the night. Following this episode, he never vomited in this manner again.

2—Tommy H. was a boy of four years, well developed and well nourished, with a mental age of six years. At this period in Tommys' life, he acquired a baby sister. Previous to this, Tommy had been the object of the exclusive attention of his father and mother. After the advent of his sister, Tommy felt that he was somewhat neglected. He accidentally discovered that by winking his eyes frequently, that such an action attracted the attention of his parents, and was the cause of much concern on their part. This action he found when continued resulted in a diversion of attention to him. No physical basis was found to account for this condition. His parents were advised to obviously neglect the younger sister and concentrate their attentive efforts on him. They did so, and kept him very closely occupied, with the result that in about two weeks these facial grimaces were discontinued and have never reappeared.

3—Carl M. was a well developed, well nourished, intelligent boy of three, living in a foster home. One day in playing with his older brother, he apparently received a blow on his left elbow. It was evidently not a very severe blow, as there was no swelling, redness, or abrasion of the skin. For a whole day he refused to move his elbow, and would scream in apparent terror whenever movement was attempted. His foster mother believed that his arm was broken. Upon examination, no bony displacement was found. By diversion of attention, accompanied by gradual movements of the elbow, he began to realize that the elbow could be moved without pain. When this realization was forced upon him, he moved his arm without effort, and in a few minutes was playing with his train on the floor.

4—Vernon D. was nine years old, and had been wetting the bed each night for the preceding seven months, since he had started to school in September. His mother prided herself upon her efficiency in the home and her expert hygienic care of her children. She always was present when her children returned from school; her meals were always exactly on time. The child arose at exactly the same time each morning, and went to bed with only a few minutes' variation from the regular time each night. She boasted that his clothes were always mended, that fresh clean clothes were always available. She said that the pantry was always filled, and that proper lunches were always available. Everything in this home was carried out exactly upon a routine basis. This boy's mother had not been to a card party or an afternoon entertainment since the birth of this child, because she felt it her duty to always be present when the child returned from school. He had never been allowed to go to the corner grocery by himself, to make purchases. The child was evidently then entirely dependent upon his mother. He had no responsibilities of his own. Upon analysis of this case, it was believed that this failure to delegate responsibilities to this boy was the basis for his bed-wetting. His mother was instructed to relax her routine, give him minor responsibilities, and the boy was told that it was proposed to give

him some medicine each night to cure him of this habit. He had a great aversion to the taking of medicine, and promised his mother that if she would not give him the medicine, he would cease to wet the bed. He carried out his promise, and up to the present time has ceased his enuresis.

5—Edward W. was a boy of ten years, of normal intelligence, who had been living in an institution, but had been transferred to a boarding home. During his stay in the institution, he had developed a fecal incontinence, which the attendants were not successful in curing. No physical basis for this incontinence was found. He was placed under the care of a foster mother who was an elderly lady, very firm, and positive, who was instructed to make an attempt to cure him of this habit. She tried corporal punishment, removal of food, putting him to bed, making him wash his own clothes, but these were without success. Finally she hit upon the plan of making him wear a sign pinned to his clothes in the back, upon which was written: "Edward Stinkpants." This was pinned to his clothes on Saturday morning, and he was forced to wear it in the presence of the two other children in this home, and upon the visit of his father, and he was told that if this habit was not stopped, he would be sent to school on Monday morning with the same sign glued to his back, and that his teacher would be asked to exhibit this sign to the other pupils in his room. This threatened action effected a cure, and his foster mother has had no further difficulty.

Vera D. was a well nourished, well developed girl of three years, who had an older brother, and who in the course of their play, stepped on her left wrist. During the whole day this girl refused to move her wrist, and screamed if her mother attempted it. It was determined upon physical examination that there was no injury present in the wrist, an dthe child was induced to move the wrist after sufficient diversion of attention had been developed. Upon being convinced that her wrist was not injured, the child was able to resume her play and use her arm as freely as before the injury.

7—Elizabeth G. was an undernourished girl of ten, who ate an insufficient quantity of food, had many nightmares, and became excited at the mention of deaths of unknown persons. She was constantly alarmed about the possible illness of her infant brother of six months. Her grades in school were excellent. She frequently had emotional attacks in which she cried for a considerable period of time, if accidental deaths narrated in the newspapers were mentioned in her presence. Due to her malnutrition, it was decided that a regime of rest should be instituted. It was arranged that she should have one-half hour's rest instead of her gymnasium period in school, and another half hour's rest following her luncheon, along with twelve hours' rest at night. Mild sedatives were given her at night to induce this rest. In four months' time, with this schedule, she gained nine pounds; her appetite improved; the emotional attacks ceased, and the nightmares disappeared. This increase in weight brought her up to the average weight for her height. Upon the attainment of this weight, her psychoneurotic actions disappeared, her mother described her as being a different child.

8—Janet M. was an institutional child of two years, who was markedly undernourished, and refused to eat. When forced to eat, she almost immediately vomited up a large portion of her food. After a great many of these vomiting attacks, Janet was wrapped in a blanket, and fed by gavage. This procedure was repeated once and the vomiting ceased. In order to induce the child to eat, thereafter, it was only necessary to bring forth the stomach tube and threaten her with its use.

9—Eleaner B. was an infant of one year, who was brought to the physician because she cried and screamed at various intervals during the night. Upon examination she was found to have a dermatitis of the buttocks which was found to be due to an ammoniacial diaper. The crying spells were found to be identical with the liberation of ammonia from the urine on the diaper. Measures were instituted for curing of the ammoniacial diaper, and the screaming and crying ceased.

10—Joyce C. was five years old, of average intelligence, ordinarily well behaved and an obedient child. She was an only child, and was very desirous of having considerable attention paid to her actions. She had found that by carrying out various practices, such as rubbing her umbilius, or picking her nose until it bled, it would cause great concern on the part of her mother, to such an extent that a physician was called in to see her. One day her mother discovered a small vesicle on the inside of one cheek. For some reason this did not cause very much concern upon the part of her mother, and Joyce was assured that this amounted to nothing. Upon the request of the child the mother later looked into her mouth, and discovered that there were a great many abrasions of the mucous membrane on the inside of both cheeks. In great alarm, the mother did call her physician, who discovered that these abrasions were caused by the biting of the inside of her cheek, and were arranged in a perfect line corresponding to the occlusion of the teeth. The reason given by the child for this action was that she wished to see the doctor.

11—Tommy H. was a fat, well developed boy of thirteen months, who had been exclusively breast fed up to this age. His mother had been unable to induce him to take other food. At this time it was decided that it was high time that he should be weaned. The nursing was abruptly terminated by the mother leaving town for three days. The child was left in the care of a supposedly competent practical nurse. Upon their return they found the child acutely ill. He had refused to take any other food and even water during her absence. The child was hastily removed to a hospital with a very acute acidosis from which he slowly recuperated. Thus you see a starvation acidosis is quite possible, when feeding habits have been previously neglected and a child with a stubborn personality refuses to eat other than the food to which it is accustomed.

Refusal to sleep and eat are perhaps two of the most common problems presented to the attention of the physician, and obviously they are difficulties which directly affect the child's health. It is quite often true that refusal to sleep is due to perversion of suggestion. If each bed-time is accompanied by struggling and crying in the attempt to put the child to bed, so that these acts become associated, the result is that a habit is formed which presents itself on each occasion. For example, it is more rational to make going to bed an interesting event. Interesting

events are not ones in which children are very suddenly compelled to carry out orders. To make going to bed interesting it may be desirable to tell bed-time stories so that the child will be anxious to go to bed in order to hear the story. The procedure may be begun slowly, all toys first being put in their place, and then clothes carefully folded. Going to bed then is to be treated as a daily event which is of no especial concern to the parent, but one which is inexorably carried out, with an interesting background. Restlessness at bed-time is quite often evidence of an overstimulated brain. The child who has had an exciting romp with a parent prior to bed-time or one who is excessively physically tired often finds it difficult to sleep. Obviously this restlessness can be cured by discontinuing the romp or curbing the daily activities.

Refusal of food may be treated in somewhat the same manner. It has been definitely proven from a physiological standpoint that there is a close relation existing between appetite, digestion and the mental state. Quite often refusal of food ceases when children learn to feed themselves, or learn not to be waited upon, or find that their struggles to refuse food do not cause the usual parental alarm. The parent should cultivate a disinterested manner and in order to emphasize the length of time required for eating should sometimes take the plate away before the child is finished. Such methods of treatment are the common accepted principles upon which these refusals of food or sleep are treated. It is evident that the matter of sleeping and eating has a distinct bearing upon the child's physical development, and is a matter of earnest concern to the physician. Because of the relationship existing between physical development and habits, it is then imperatively necessary for the physician to be able to outline a system of training which will attempt to cure these defective habits.

The cases just cited are to my mind examples of the close relationship existing between the psychic side of a child's life and the medical treatment which might have been otherwise instituted on the supposition that the child had an organic illness. It emphasizes the need for realization of the psychoneurotic elements which must be taken into consideration when children's illnesses are connected with their behavior. It emphasizes what I have stated before, that every pediatrician must also be a psychiatrist, and be able to correctly evaluate behavior.

This study I believe has become the frontier of pediatrics and has brought about a close relation between pediatrics and psychiatry. It has become quite the order of the day for mothers to talk to their children's physicians concerning I. Q.s and various kinds of inferiority and superiority complexes, on which subject the pediatrician must be capable of giving satisfying advice. Mothers and fathers wish to know, for example, why their child has developed an extreme negativism. Oftttimes the imitativeness of the child causes concern when it is reflected in his form of speech. He may develop an authoritative voice which is always demanding or grasping. These forms of speech are evident developments in the growth of a child's personality, consequently mothers and fathers often inquire whether they may prevent their child from developing such undesirable traits.

It is required that the pediatrician shall answer questions concerning the suggestibility of children. Have you not been asked many times over how this child may be made to eat cereals or drink milk, when he absolutely refuses to do so? What answer can you give to the mother who inquires the best method of curing her child of a fear of the dark, or of animals, or of falling, or the sight of blood? What advice can you offer the mother who states that her child is wakeful and has nightmares? What is to be done with the child who is excessively timid? What answer can you give a mother who complains that her child has the habit of masturbation? Can you explain to her that it is not a criminal practice, and not of moral interest, but that it is a habit of the same character as thumb-sucking? It is far better to have the mother understand that the habit is one in which she should make the child have a sense of disgust; she should not appear alarmed, or give any evidence of the worry which it presumably causes her. There are many other questions which are constantly asked by parents regarding such habits as head-banging, dirt-eating, neurotic constipation, breath-holding, thumb-sucking, and stammering.

Perhaps one of the most common habits which is presented to the attention of the physician is that of enuresis. It is perhaps unnecessary to repeat to you the fact that enuresis is a habit, but this idea has not permeated the general intelligence of

the community to such an extent that it is commonly regarded as a habit. Many cases of enuresis are cured by such simple measures as by talking to the physician in his office, by a system of rewards, by a system of charts, on which is kept a daily record of this habit, or by a great many other methods which are suited to the individual child.

It has seemed to me that the history taken on admittance of the child and parent to the office should not only include questions concerning the physical condition of the patient, but also should include questions regarding his habits which may throw some light upon the treatment of his physical condition. With merely an idea of suggesting some such trend of questioning, I should like to submit the following questions as an example of what might be asked a parent in regard to his infant's habits:

When does he cry?—Is it a cry of hunger, fear, rage, or does he wish to be carried or petted?
Does he have temper tantrums?
Is he restless?
How does he treat his pet animals?
Is he hungry?
Does he recognize his nurse's authority ?
Does he jump at sudden noises?
Does he kick off the covers?
Is he curious?
Is he imaginative?
Is he imitative?
Is he happy and contented?
Is he obedient?
Is he destructive?
What is the type of his play?
Is he affectionate?
Is he selfish?
How does he get along with his playmates?
Does he sleep quietly?
Does he have to be coaxed to eat?
Does he like to be bathed?
In what position does he prefer to sleep?
Does he cry when the other children cry?
Is he afraid of persons outside the family?
What are his especial dislikes?

Such questions as these, while not in any way complete, may lead you to discoveries which may be very helpful in not only developing the child's personality, but also in correcting physical ailments.

It is to be remembered that differences in temperment are to a large extent due to the parental attitude. Fears are practically always communicated to children by the expressed anxiety of their parents. Habitual obedience or implicit subordination may make a very dull child, because of the inhibition of spontaneity, but on the other hand it should be the aim of parents to promote a gradual growth of independence. Undisciplined children on the contrary provoke negativism when their control is not achieved. Such lack of control results in appeals, expostulation, threats, ineffective punishments, tears, and fits of temper, when the child attempts to have its own way. Negativism is quite often a symptom of unrest, caught from the disturbing atmosphere of a broken home. These briefly are some of the parental problems which you may be called upon to help settle as the friendly family physician.

The behavior and training of children has become a matter of public concern. A vast literature has been developed of late years concerning the training and care of children, especially with regard to their habits. Interest in the pre-school child has reached the stage where their training has been undertaken not only by special schools devoted to this purpose, but also in certain cities by the public school system itself. Many newspapers carry daily articles concerning the correct habit training of children; many magazine articles have been written upon the same subject. The habit training of children has become a subject for discussion in the pulpit, for parent-teachers' associations, women's clubs, child guidance clinics, and school organizations of various types, all of which shows a wide-spread interest in the psychic side of a child's life. Evidently there is a great demand for information concerning the proper training of children. Where such a demand exists, it must of course be supplied.

To my mind this information should be most properly supplied by the pediatrician or family physician; however, it is evident that such information must be accurate and must be backed up with experience. Concrete suggestions must be made for the eradication of such faulty habits. It must be at least the equal of that taught by the layman. Such information has up to the present been largely given to the public by the laymen, who have sensed the demand for such knowledge, and taken advantage of their opportunity. Such sources of information are not always based upon the same experience or the same elementary knowledge as the physician trained in these matters and erroneous impressions and opinions are often expressed. It is again a striking example of the slowness with which new demands and new inquiries for knowledge by parents have been met with reluctance by the physician. It is high time that he realizes that he should be the leader in these movements, and should establish the frontiers in med-

icine himself. Habit training and parent counsel should be incorporated into and become a part of general as well as pediatric practice. The day is past when children are only brought to the physician because they are physically ill, for there are an increasing number of mothers who bring their children to a physician for advice concerning habit training only. This education of parents and demand for knowledge having been fostered by the press must be met; such advice can not be now sidestepped and if this appeal is not met, it is extremely probable that the laymen will take it into their own hands as they have done with other matters pertaining to health, and establish clinics where such information may be obtained. Such clinics of other types have become a basis for considerable discussion of their ethics, and have occasioned much concern upon the part of physicians. To avoid this mistake again, the pediatrician should undertake to fit himself to provide parents with this knowledge, and thus lead the way into a new field of practice, where he may anticipate these demands.

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CONSERVATION IN SURGERY OF BENIGN BONE TUMOR*

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The cumulative experience arising from such an institution as The Registry of Bone Sarcoma, (which originating through the independent and unselfish activity of Codman, is now carried on under the auspices of The American College of Surgeons) and the continued research and missionary activity in this subject of Bloodgood and others, are doing much to crystalize in surgical practice the principle not only of early radical action that will bring in an increasing number of cures in many types of malignant sarcoma, but also of conservative intervention in definitely benign though locally destructive lesions. In either instance there is still probably justification for stressing these points by precept and example; and in connection with the benign lesions there have come to mind three instances in the experience of this Clinic which present good examples, of the possibilities of the surgery of conservation.

It may be proper also to emphasize what Bloodgood, Codman and others are stressing so constantly as a corollary, namely that the surgeon's clinical decisions as to radicalism or conservation cannot safely be made unless backed up by the opinion of an experienced pathologist, given by frozen section diagnosis at the time of operation. It does not help the patient much to find out a few days later that a benign looking tumor treated by conservative surgery was really an atypical malignant one and by then well on the way to metastasis, which, however, is really a more terrifying mishap than to learn some time after operation that the limb sacrificed for a supposedly malignant tumor might have been saved by local resection. In the three instances here mentioned a margin of doubt in the mind of the operator working without immediate microscopic diagnosis would have turned the scale in favor of a mutilating operation.

The first patient in mind came under the care of Dr. R. D. McClure, Surgeon in Chief, half a dozen years ago, presenting a destructive lesion of the upper end of the femur in which had occurred a pathological fracture. While the age of the patient, the location in the bone, the X-ray appearances, and even the gross appearance of the tissue at operation were all indicative of a diagnosis of giant cell tumor; yet the area of bone destruction included head, neck, trochanters and upper shaft, an unusual extent for the apparently brief duration of symptoms, and might well cause an operator to retain some question on the clinical diagnosis. This, coupled with the hopelessly crippled limb that a resection would leave, might naturally have led to a disarticulation at the hip. But the frozen sections showing typically benign histology, conservation was the procedure of election. After complete removal of the upper third of the femur, the upper one-half of the fibula was implanted into the femoral shaft and made to articulate in the acetabulum. The graft "took", and this patient, who has since been under the observation of the writer, is able to walk without cane or crutch and only a slight raise in the heel of her shoe.

The second case in mind, though of a distinctly minor character, is still to the

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point. A destructive neoplasm had involved the shaft of a metacarpal bone nearly to its base. The operation permitted confirmation by microscopic section of the clinical diagnosis of enchondroma, and of the safety of local resection The simple removal of two-thirds of the metacarpal would reasonably be followed by a luxated, deformed and useless finger, and a complete digito-metacarpal amputation might have been the logical alternative. However, encouraged by the certainty of benignity, the metacarpal was replaced by a graft from the tibia, which not only "took" but also managed to reward the careful after treatment by an almost normally functioning metacarpophalangeal joint, and an entirely natural looking hand. It is quite apparent that the result of the decision re conservation was as gratifying to the patient as to the writer.

While not as brilliant as the case of the first patient, the third case which we are reporting in detail, equally well bears out the principles being emphasized, and in addition furnishes an example of regenerative possibilities without osteoplastic aid that quite justified the hopes of the writer at the time of operation. In brief a destructive neoplasm was found to have completely destroyed the upper extremity of the tibia, leaving only a thin bone shell, and this had suffered an incomplete fracture along the articular surface. From this shell the tumor tissue was carefully curretted and wiped out, the interior cauterized with crude carbolic, the cavity filled flush with fresh blood from a neighboring vessel and wound closed snugly in layers. A ring caliper splint protected the bone shell against further damage. Calcification in the excavated tibia had begun by X-ray in a few months and was nearly complete in a year with 100% function in the knee and not the slightest disability.

CASE REPORT

History—P. D. Case No. 70115: An Austrian born laborer of 40, was admitted on November 29, 1925 with a complaint of rheumatism in left knee. His past history contained nothing which seems to have any bearing, and he had always been strong and well. He gave about seven months as duration of complaint, consisting of soreness for about two hours in early part of the day, and in last three months nearly constant soreness while working; but no disability until three days prior to entry when his knee "gave way" with more severe pain, he was forced to quit work, and has limped since. While the patient ascribed his trouble to injury, he was unable to specify any single injury, but claimed his legs were frequently bumped, especially above the knee, during the course of his work. He had been under treatment by various physicians on basis of rheumatism for the three months immediately prior to admission. In course of same he had had all his teeth removed.

Examination—The examination on admission showed a man in no considerable discomfort, well developed and nourished, and in excellent general condition. No important physical findings save chronic tonsillitis appeared on general examination.

The left knee seemed normal on superficial inspection but on closer scrutiny there seemed a greater prominence of superficial veins over the upper one-third of subcutaneous aspect of the tibia. There was no local heat to palpation and no periarticular or synovial thickening of the knee joint, nor was there any articular tenderness. However, over the epiphyseal and metaphyseal areas of this end of the tibia there was quite marked tenderness to firm pressure. There was no crepitation. Actively the knee could be moved to nearly normal range but when full extension or extreme flexion were forced there was apparently quite definite pain.

The patient showed a normal temperature, pulse, and respiration rate. The blood Wassermann test was negative, routine urinalysis findings were normal as were also red and white blood counts.

Diagnosis—The case was first seen by the writer in consultation from another department and a tentative diagnosis of neoplasm, probably benign, of upper tibia was made on the physical findings.

Comment: The minimal physical findings seemed to rule out an arthritic or tuberculous (joint) lesion and to place the lesion definitely in the metaphyseal region of the tibia. The dura-

Figure 1

A. P. film before operation. Diffuse rarefaction metaphyses and epiphysis. Delimitation at diaphysis not sharp. Apparent surface irregularity suggesting proliferation unusual aspects. These items not entirely characteristic. Note articular fracture near tibial spine and suggestive bulging.

tion of symptoms was against osteomyelitis, unless of the Brodie's abscess type; and this is almost never found close enough to the joint to cause pain on manipulation of same, and usually causes a little elevation in temperature when subjective symptoms are marked. Accordingly a neoplasm had to be considered. The duration of symptoms and their minor degree were entirely against malignancy and in favor of a benign tumor. Also was the location in the end of a long bone, especially when after several months duration the lesion still seemed to be a central one. The only factor against the giant cell tumor was the age of the patient, though not wholly so, but this led to an additional consideration of enchrondroma. The text of the Roentgenologist's report follows: "December 1, 1925 examination

Figure 2
Lateral film before operation. Note suggestive interior trabeculation, not found at operation.

was made of the left knee. There is a lesion involving the upper portion of the tibia extending from the knee joint downward for about four inches. This has caused the destruction of the normal bone tissue. The tissues remaining show marked evidence of trabeculation most of which is rather fine in character although there are some large areas of trabeculation present. This is central in origin and shows no definite evidence of invasion. There is no evidence of breaking through of the cortex. The anterior portion of the cortex of the tibia at the knee joint is bulged upwards into the joint but is not broken through. Impression: Benign bone tumor, probably giant cell sarcoma or osteochrondroma."

Our interpretation of films was in accord with the above, including the conclusions, save that some concern was given to the absence of a sharply defined border at the diaphyseal margin, suggesting a slight possibility of malignancy, and that the trabeculation probably represented peripheral rather than central residual bone architecture. In addition we definitely felt that there was evidence of fracture, incomplete, in the articular plate of the tibia.

Comment: With these X-rays it was difficult to strongly consider a malignant sarcoma. The extent of the lesion in the absence of cortical destruction or extra-cortical involvement, and the slight bulging manifest, are quite typical characters of benign or giant cell tumor. The trabeculation when evidently not new bone formation but residual bone architecture was against malignancy. Enchrondroma may leave this trabeculation, but centrally in the bone.

Exploration for microscopic diagnosis, with immediate further surgical intervention as indicated, was deemed the course to pursue. It was felt that the patient should be prepared for possible amputation, but efforts were unavailing to obtain this permission unless he could be positively assured that his trouble was cancerous. Accordingly exploration under spinal anesthesia was chosen.

Operation—Curettage, cauterization of tibia for giant cell tumor.

Date: December 3, 1925.

"Limb is prepared to the upper thigh and sterile tourniquet applied, close enough to the knee to allow amputation above it. A curved incision is made over the internal aspect of the upper end of the tibia starting at the mesial aspect near the joint line and curving forward and downward towards the crest. Outlined flap of skin and subcutaneous fascia turned back; more nearly longitudinal incision is made through the quadriceps fascia, latter reflected from the bone with periosteum over an area of about 2 inches and this area of bone is cut through with an osteotome; except at the bottom it is very thin, 1/16 to 1/8" in thickness.

"Pathology: The piece of bone is lifted out with practically nothing adherent to it. Its deep surface is somewhat irregular and foveated, but is not rough in the finer sense and does not present the aspect of invasion. Little or no blood or other fluid appears in the cavity below, but instead a brownish red mass of very friable tissue, which fills the cavity solidly. This broken up with the finger fails to show any fibrous stroma and no spicules of bone, with nothing to suggest either new bone formation or portions of the old bone frame work. Impression is giant cell tumor and the pathologist at once confirms this by frozen section.

"The cavity is then thoroughly cleaned out. The skin edges have been very carefully protected with towels; after curetting the entire contents of soft material, the cavity is found to occupy the entire upper end of the tibia and at the top in one place the cortex has disappeared and the deep surface of articular cartilage shows. There is a fissured fracture along the narrow wall just below the artificial opening made, but it is not certain whether this was produced by the trauma of osteotomy. The walls of the cavity are irregular but not rough with spicules. At the lower limits the marrow is reached. After thoroughly scraping with curette and further cleaning off by hard wiping of gauze stocks, the cavity is dried and its walls thoroughly swabbed with carbolic, the soft tissues around the edges of the bone being protected by alcohol gauze. Two dripping alcohol sponges are then packed into the cavity, these in turn are followed by saline, which when removed leaves the cavity empty and

to the eye obviously completely cauterized. Very little oozing occurs from the bone margins.

"All instruments are changed with the gowns and gloves. The mesial inferior geniculate vessel when unclamped bleeds quite freely and this stream is used to completely fill the cavity with fresh blood, the table being tilted so that it fills it entirely full. This vessel and one or two other small arteries are ligated with the necessary subcutaneous veins and a very careful closure in layers is made. The flap is so designed that the last two lines of suture do not overlie the incision in the deep fascia and periosteum. The leg is dressed on a full length splint."

COMMENT

Amputation could have been considered here only on basis of hopeless compromise of the joint, and even if this had been necessitated by the surgical intervention and loss of substance, a subsequent bridging by grafting would have been preferable to amputation. With the diagnosis made incontrovertible by the microscope, maximum conservation seemed the definite indication. The treatment however, was predicated on complete closure and prompt healing. Packing of the cavity or drainage and inevitable secondary infection would probably have led ultimately to amputation, and benign tumors complicated by

Figure 3

Six months post-operative; cortical defect made at exploration shows clearly, but elsewhere increased density is suggested.

infection have been known to become malignant. An organized blood clot seemed to be the best basis for regeneration of bone tissue, and this proved to be the case.

Pathological Report—"The specimen consists of a piece of cancellous bone and granulation tissue weighing 160 grams, removed from cavity in head of tibia.

Microscopic: Sections taken through tissue removed from head of tibia show the same composed of delicate fibrous stroma, round or cuboidal cells and large multinucleated cells with abundant protoplasm. Multinucleated cells are of the foreign body type. Irregular blood spaces are seen

Figure 4

Same date as figure 3. Extent of cavity well shown. Compare with Fig. 6.

and throughout the tissue a small amount of yellowish-brown blood pigment.

Diagnosis: Giant cell tumor."

Post-Operative Course—This proved a most fortunate one for the patient. It was almost entirely a afebrile and comfortable. On the ninth day, the wound apparently healing per primum, a plaster dressing was applied to the entire limb and principally for economic reasons, he was discharged to his home on the 12th. Later a Thomas ring caliper brace was applied and he returned to work in one month; a sitting down job being secured.

At the end of two months X-ray showed a slight increase in density in the area of the lesion, and no further change in joint surfaces. After three months the knee permitted a range of motion of about 45° and at the end of another month 90°. Tenderness at site of operative defect in cortex was still complained of. Six months post-operative he had no symptoms referable to knee and X-ray examination showed unquestionable calcification of the blood clot though density was still less than normal. At this time against advice, the patient discarded the brace.

He was re-examined clinically and by X-ray about a year after operation, being shown before Central States Orthopaedic Society at that time. He professed himself entirely symptom

free and range of motion of knee was nearly normal; except for a thin operative scar there was no external exidence of his lesion. X-ray's taken then showed nearly complete recalcification. At time of writing, 18 months post-operative, he was still at work with no complaints."

Figure 5
One year post-operative. Note extensive sclerosis and filling in.

Figure 6
Sharply defined area of decreased density represents still persisting osteotomy defect. Note degree of bone sclerosis posteriorly and near joint; latter apparently unimpaired.

UNDULANT FEVER IN MAN AND ITS RELATION TO BOVINE INFECTIOUS ABORTION (BANG'S ABORTION DISEASE)

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The significance of the illuminating discovery made by Alice C. Evans (1) in 1918 that the causative agent of infectious abortion in cattle and of undulant fever in man are closely related, if not identical, is now being realized by the physician and by the public health worker. First, because many undefined forms of fever and complex symptoms are being understood, and second, because a new public health problem is recognized. Undulant or Malta fever is one of the oldest known diseases of man, having been discussed by Hippocrates in "Epidemics" 450 B. C. An accurate description of the disease, however, was not presented until the report by Marston (2) appeared in 1863. Clinically, the disease is characterized by undulations of pyrexial intensity indefinite in duration, an irregular course associated with a complexity of symptoms and low mortality.

The etiologic factor of the disease was discovered by Bruce (3) in 1887 to be a small micrococcus and named by Hughes (4) *Micrococcus melitensis.* More recent studies, (1) however, revealed it as being a small rod.

Diagnosis of the disease in man may be confirmed by means of the serum agglutination test or by blood and urine culture. The micro-organism has not been found to occur in the feces. After having isolated the causative agent, the source of infection in man remained very much of a puzzle for more than eight years, or until the British Commission (5) for the study of disease began to function. The discovery of its host, the milch goat, was then largely accidental. In its host, the goat, the micro-organism establishes itself in the udder and produces a mild mastitis. It is eliminated in the milk in large numbers, often as high as 25,000,000 per cubic centimeter. It is also eliminated in the urine and is responsible for a high rate of abortion in affected female goats.

Diagnosis of the disease in goats can only be made through serum agglutination tests or bacteriological examination of the milk or diseased organs. The ingestion of a small amount of infective goat's milk

by a susceptible individual is followed by infection in eight to fifteen days. Primary invasion of the tissues appear to take place in the mucosa of the throat.

Turning now to the abortion disease in cattle we learn from the literature that "storms" of premature expulsion of the fetus have occurred in herds of cattle in European countries for more than a century and have been a subject of no little discussion by eminent veterinarians. A searching study of the bovine abortion disease was not made until 1897 when Bang (6) revealed through his researches that it is caused by a small rod-like micro-organism designated as *Brucella* (*Bacillus*) *abortus*. He also showed that the chief anatomical change which leads to the premature expulsion is a placentitis. But it was not until 1911 that by accident the udder of the cow was found to be the chief seat of habitat of the abortion germ. This was discovered by Schroeder and Cotton (7) and Theobald Smith (8) independently, at about the same time. The abortion germ is eliminated in the milk from the infected udder, in some cases for many years, but not in what one would consider large numbers—rarely more than 10,000 per cubic centimeter.

Infection in the cow, which usually takes place by way of the digestive tract, is neither always followed by abortion nor do many infected animals abort more than once. There are no other known clinical symptoms manifested in the animal except possibly a mild mastitis. It is difficult to make a diagnosis of the abortion disease in cattle from clinical symptoms alone as abortions occassionally occur from other causes of an infectious nature. One must therefore rely on the serum agglutination test or a bacteriological examination of diseased organs in making a diagnosis of the disease. *Br. melitensis* has been shown to be pathogenic for the cow and likewise *Br. abortus* for the goat.

From the foregoing discussion it must be apparent to all that there is a close similarity in the course of the disease in the goat and in the cow. Further, since the two micro-organisms bear a close similarity according to laboratory tests, the question now arises, is *Br. abortus* also pathogenic for man, and do the clinical symptoms which follow infection differ from those following infection from *Br. melitensis?* In order clearly to answer this question it first becomes necessary to review the history of undulant fever in the United States. Its appearance may be divided into three periods. The first period concerns the recognition and description of the first known case. This case was reported by Craig (9) in 1905. The second period concerns the identification of the disease in Southwest Texas in 1911 (10), (11). The disease appears to have been endemic in this section of the country for many years and no doubt had its origin in goats imported from Europe. The type of organism involved here is the true *Br. melitensis*. The third period is the beginning of the one which concerns us at the present time. A case of the disease reported by Keefer (12) in 1924 and occurring in Baltimore, is the first one in this country in which the individual did not have a history of drinking goats' milk or associating with goats, but did have a history o fdrinking raw cow's milk in large quantities. Further, the type or organism recovered from the patient was identical with *Br. abortus* as determined by differential laboratory tests. This was not, however, the first association of the disease in man with the abortion disease in the cow, as several cases had previously been reported from South Africa. (13), (14). During the past three years more than fifty cases of the disease have been diagnosed in different parts of this country, fourteen of which have occurred in Michigan. None of these cases have a history of drinking goats' milk or associating with goats, but most of them do have a history of drinking milk from or associating with cows affected with the abortion disease.

Clinically, the disease in man in Europe caused by *Br. melitensis* and in this country, where *Br. abortus* is involved, appears to be indistinguishable. There have perhaps been fewer cases of the mild type reported than are reported in Europe, but this may be due to the fact that the presence of the disease has only been recognized for a short time. The complexity of the symptoms one encounters makes the disease difficult to diagnose at the bedside, and it is not surprising to find that a presumptive diagnosis has been in error in practically all cases so far encountered as it is not readily recognized by physicians in those countries where it has been prevalent for many years.

That the similarity of the disease in the goat and in the cow had gone unnoticed until a few years ago is perhaps due to the fact that the disease was studied in the two animals from a different viewpoint, one involving the well-being of man and the other the conservation of livestock. It remained for Evans to correlate

our understanding of the two causitive micro-organisms, thus to make the disease in man and the disease in the cow a combined problem which should interest both the medical and veterinary professions.

The association of *Br. abortus* infection in man with the abortion disease in the cow has been questioned by many on the supposition that the disease has been prevalent in cattle for many years and many people have consumed raw milk from them in which the micro-organism in question was present, but not until recently has the disease in man been identified as being caused by *Br. abortus*.

The recent identification of many cases of undulant fever in man in all parts of this country and the determination of *Br. abortus* as being the etiologic factor has one of three possible explanations, namely, the disease may have been prevalent in the past, but was not recognized; it may be of recent occurrence owing to the fact that infection appears to depend upon mass dosage of the micro-organism, a state which has not existed before in the case of infective cows' milk; the origin of the disease may be from an animal or its product other than the cow with which man associates or consumes as food.

Although there is much evidence to incriminate infective raw cow's milk as being the source of the disease in man, one should not be too hasty in their conclusion until all other possible sources of infection are exhausted.

It is evident from the gradually increasing number of cases being reported that unless the sources of the infection is soon blocked, undulant fever in man may become a serious disease in this country.

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STERILITY IN THE FEMALE*

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The perpetuation of life is probably the strongest instinct of human beings, including, as it does, self-preservation and reproduction of kind. The reproductive power, therefore, as well as metabolism and motion are attributes of normal individuals, and any departure from the normal in this respect must be considered a pathological entity. The inability to reproduce is called sterility, and the problem of sterility is one of the most frequently met and least understood confronting the physician today.

Probably the outstanding fallacy in the consideration of sterility not only by the laity but also by the majority of physicians is the assumption that because a woman cannot become pregnant or cannot produce a living child, it is entirely her fault. Careful investigation reveals that a large proportion of barren marriages are due to some defect in the male generative organs. To simplify this paper, I shall ask you to take for granted that the husbands of the patients considered by me are perfectly healthy persons, having normal powers of coitus and producing normal, healthy, sperm.

CLASSIFICATION OF STERILITY

Since sterility includes not only cases incapable at any time of bearing children but also those cases where one or more conceptions have taken place and further pregnancy is impossible, it is necessary to classify the term.

We may therefore say that sterility is either

1. Absolute—where conception has never occurred,
2. Relative—where conception has occurred but a dead fetus or child has resulted, or
3. Conditional—where conception and normal child birth has occurred, but the patient is incapable of further conception.

Or we may divide sterility into

1. Primary—where the patient, while living with a fertile man during her period

* This paper was read before the Maimonides Medical Society February, 1926.

of sexual maturity has never conceived, and

2. Secondary—where the woman has produced normal children but is sterile since then.

And again we may classify sterility as

1. Congenital—where some anatomic anomally is present.

2. Acquired—where fertility was at one time possible, but some condition has been contracted rendering the patient sterile, or

3. Apparent or temporary sterility, where the patient is potentially fertile, but due to some factor in her life has not had a proper chance to become fertile.

CAUSES OF STERILITY

Sterility is physiological during pregnancy and a short time afterwards during lactation, and after the climacterium. It is also noted that fertility chances are lowered as barren married life continues. Thus 15% of women conceive for the first time within a year after marriage, 6% between 3 and 5 years after marriage, and only 2.5% after 5 years. Also it is known that the older a woman is at the time of marriage the less chance she has of becoming pregnant. Thus, woman's fertility is greatest between the ages of 20 and 30 after which it diminishes quite rapidly.

Sterility which occurs after previous childbirth may be due to a birth injury which causes a prolapse or deep perineal laceration, or an extensive cervical laceration. The latter may produce sterility directly by offering no mucus plug for the sperm or indirectly following infection which so frequently occurs after even slight lacerations. The infection produces a chronic endocervicitis which so distorts the cervix as to render the passage of the sperm particularly arduous. Also, the infection may be transmitted directly to the tubes by way of the lymphatics which drain in that fashion, not affecting the corpus uteri at all. In this case we get salpingitis following a normal pregnancy, but producing a sterility afterwards.

An interesting case in point follows:

Mrs. D., a para iii, age 30 had been married twice. All her pregnancies resulted from the first marriage. About a year after the second marriage she complained of severe abdominal pain and leucorrhea. She had always been regular in her menstruation, until about two months previous. Since that time there had been amenorrhea. She ran a septic temperature and examination disclosed a bilateral pyosalpinx. A posterior colpotomy was done and the abscesses drained. She made an uneventful recovery, but the amenorrhea continued. Three months later there was distinct evidence of pregnancy, the fetal heart sounds being plainly heard. At seven months these disappeared and a still born fetus of seven months was delivered.

Here we see that infection occurred in the tubes during pregnancy, and it is similarly that salpingitis occurs after a normal pregnancy. It appears that the infection occurs during the pregnancy, but because of the drainage from the cervix to the tubes, the uterus itself remains undisturbed. Sterility follows because of occlusion of the tubes.

Secondary sterility may also be due to infection occurring during puerperium. The resistance of the pelvic organs is lowered at this time due to the congestion following delivery, and infection resulting from intercourse or parturition finds an easy access to the uterus and adnexa. Then we have the puerperal septicemias and sapremias, with their grave consequences affecting fertility.

Another very frequent cause for sterility in patients with normal physical findings is asthenia. This may be due to a neurotic habitus, anemia, tuberculosis, diabetes, or other chronic disease condition. These patients are the type who are underweight, always complaining of some vague pains and aches, have dysmenorrhea, poor appetites, and sluggish bowels, and are on the whole, very unmanageable. We all see them frequently, and scrutiny shows that a considerable percentage of them are sterile.

Glandular dystrophies also produce sterility. Hypopituitary syndromes, cretinism and maldevelopment of the ovaries are associated with sterility. Certain occupational diseases as mineral poisoning and X-ray exposure very frequently produce sterility, which may be temporary or permanent, depending on the amount of exposure to the toxic substances.

We have a definite routine in the examination and management of sterility cases which, while purely arbitrary, is at least, very thorough. The patients' history is, of course, very essential.

The age and length of time of marriage is first ascertained. Their relation to sterility has been mentioned. The past history is carefully gone into. Exanthemata, particularly mumps may produce sterility. Appendicitis, peritonitis, etc., also very frequently produce a secondary occlusion of the tubes, and the history in this regard should always be investigated. Tuberculosis, diabetes, anemia, and other chronic diseases must also be excluded.

The beginning of menstruation, and

character of subsequent periods must next be ascertained. It is extremely important to ask whether there has been any change in the menstrual function after marriage. Dysmenorrhea appearing after marriage is suggestive of infection. Leucorrhea during childhood or after marriage suggests gonorrheal infection. A serous discharge after menstruation has commenced but before marriage is suggestive either of a mild infection, nongonorrheal in type, or of an asthenic habitus. There is ordinarily a serous discharge before and after menstruation, but if leucorrhea occurs between the periods, infection must be borne in mind. A purulent discharge should always be carefully examined for gonococcus or other organisms, such as streptococcus.

Severe pain in one ovarian region during menstruation may be due to ovarian cyst, as may scanty or irregular bleeding.

The marital history is also essential. Length of time of marriage and the husband's health must be inquired into. A history of tuberculosis or lues in the husband may point out the cause of sterility. Previous labors should also be carefully gone into. The length and difficulty of the labor and lacerations and repairs are also important.

The examination should be very thorough, and the gynecological viewpoint should always be in mind. Special points to be remembered from this standpoint are:

1. The thyroid—for signs of hyperthyroidism or cretinism.
2. The lungs—for tuberculosis.
3. The heart—for cardiac disease or aortitis.
4. The liver—Enlargement may point to lues.
5. The spleen—Enlargement may be significant of malaria or one of the anemias.
6. Tumor masses in the abdomen. These may be extragenital or may be myomata, large ovarian cysts, etc.
7. The abdomen should be carefully examined for tenderness. Right lower quadrant pain suggests adnexal or appendiceal pathology.
8. The skin and mucous membranes often hint of lues, anemia or jaundice.
9. The nervous system will disclose on examination lues of the central nervous system, pernicious anemia, etc.
10. A careful urinalysis should be done to rule out nephritis, diabetes, pyelitis, etc.
11. If indicated, a Wassermann, blood count, sedimentation test or blood chemistry must be done.

The gynecological examination is, of course, of the utmost importance.

The external genitalia are first examined. The hair distribution, if masculine in type, suggests ovarian pathology or some other glandular disturbance with which is associated ovarian dysfunction. The distribution of fat around the hips and lower abdomen may suggest Froehlich's syndrome. The vulva may be hermaphroditic in type, or there may be signs of poor development—the so-called infantilism. Kraurosis vulvae may be present—the characteristic dried-up appearance of the genitalia. Reddening about the labia may be due to acid urine, or to pruritis, which suggests diabetes or menopausal change.

Imperforate hymen may be a cause of sterility, although numerous examples of pregnancy with imperforate hymen are on record.

The perineum will show old lacerations or fistulae, either vesico—or recto-vaginal, which naturally result in infection and may be responsible for the sterility.

Bartholin's glands may be acutely inflamed or thickened, suggesting a gonococcal infection. The vagina may be absent or there may be atresia due to old infection with scar tissue formation. Luetic or tuberculous ulcers may also be present in the vagina. The reaction of the vaginal and cervical secretions is then taken with litmus. The vagina is normally acid while the cervical secretion is alkaline. An alkaline vaginal secretion is present after alkaline douches and in some ovarian pathology. An acid cervical canal means a destruction or dysfunction of the glands of the endocervium, and since sperm are quickly killed in acid media, may be responsible for sterility.

The cervix often shows erosions or Nabothian follicles. Frequently a thick, yellowish discharge is seen emanating from the cervix, and the normal cervical plug is gone. Lacerations, often extending as far back as the fornices are also frequently seen. All these mean chronic endocervicitis, which is one of the commonest causes of sterility.

The position of the cervix in relation to the long axis of the vagina is important. A cervix pointing upward signifies a retroversion or flexion, and the sperm will be deposited in the posterior cul-de-sac. If, by chance, some of it does not reach the cervix at the time of the ejaculation, it

will lie in the acid vagina and be destroyed. The so called pin point os usually indicates infection, although a very small os in an unusually small cervix may be a sign of infantile uterus.

Bimanual examination will show the size of the uterus and any abnormalties such as bicornuate uterus. Infantilism is indicated by an extremely small size, and is a frequent cause of sterility. Malpositions are common, though only the fixed malpositions are serious. Four per cent of all retroversion cases are sterile, while 10% of all sterility cases have retroversion, and 10-20% have an anteflexion.

A large boggy uterus may suggest an endometritis, although this condition per se is rare. A hard, fibrous fundus without definite myomata shows that we are dealing with the very common fibrosis uteri. Both this condition and extensive myomata cause an inelasticity of the uterine musculature which renders pregnancy difficult. Myomata, of course, can be distinctly palpated. Although these are not always a cause of sterility, myomata located in the region of the cervical neck are usually a cause of very difficult labors and, as a rule, dead babies.

The tubes, if thickened, indicate salpingitis. Frequently cysts of the tubes or broad ligaments can be mapped out.

The ovaries, if large, suggest cysts, although small, hard ovaries may be due to small cystic degeneration or fibrosis. Large, hard ovaries are often dermoids or osteomata.

The parametrium, following an extensive salpingitis, is thick and resistant even after the tubes resume their normal size, and is often the only indication of old salpingitis.

Our routine consists of a careful history and physical examination as outlined above. Smears taken from Bartholin's glands, the cervix and urethra are then examined to rule out gonococcus or streptococcus. A bubbling appearance about the cervix indicates Trichamonas vaginalis infection, a frequent cause of sterility, and these parasites are readily recognizable under the microscope.

If no gross pathology, absolutely indicating the cause of the sterility is found, the patient is instructed to return after having intercourse with her husband. The cervical plug is removed with a small scoop and placed on a warm slide and immediately inspected under the low power of the microscope. If present, sperm are readily recognized. If the husband is normal, they are very numerous and active.

Having ruled out pathology in the husband and finding no other pathology in the patient to explain the sterility, a pneumoperitoneum is done. Carbon dioxid gas is introduced through a canula which fits tightly against the cervix. The pressure is read on a manometer attached to the apparatus. If the tubes are patent, the manometer reading will probably not rise above 100 mm. If it goes up to 220 mm. the canula is removed and the test repeated. If only a slight obstruction is present the pressure of the gas is often sufficient to open the tube and break the adhesions. Spasm must be ruled out by the administration of atropine and the repetition of the test in a few days. If the tubes are then not patent it is safe to conclude that non-patency exists and is the cause of the sterility.

Treatment, although simple, is frequently decidedly successful. If the vaginal secretion is acid, alkaline douches are indicated. Acute inflammatory conditions must, of course, be treated locally until active infection is cleared up. Chronic endocervicitis is resistant to treatment as a rule, and a tracheloplasty is usually necessary to remove diseased tissue. Lacerations should be repaired surgically. Myomata and ovarian cysts require laparotomy for myomectomy and ovarian cystostomy. Salpingoplasty or salpingostomatomy should be done rather than salpingectomy. If the tube must be removed the ovary should be transplanted into the cornua to give at least a remote chance of conception. Pneumoperitoneum, however, will give the best results, and is an extremely simple procedure, and one that can be done by every practitioner with very little practice. Ovarian extract is occasionally useful in ovarian dysfunction though its action is rather doubtful.

A careful consideration of the sterile woman, rather than her cursory dismissal as an incurable, will give a great deal of satisfaction to the practitioner and a surprisingly large percentage of results for the patient.

COMPARATIVE VITAMIN CONTENT OF HUMAN AND COW'S MILK

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Experimental data collected under carefully controlled laboratory conditions dem-

onstrate that rats grow equally well when they receive 2½ to 3 c.c. daily of either whole raw certified human or cow's milk as the only source of vitamin A in a diet complete in all other known dietary constituents. Evidence is presented which further demonstrates that growth is not the only criterion for judging good nutrition in the young individual. Mother rats on a limited vitamin A dietary regime can not lay down in the tissues of their young, during either the gestation or lactation period or during both, the normal heritage of vitamin A. This is shown by a study of the time needed to completely exhaust the vitamin A stored in the tissues of their offspring although all body weights were average at the weaning period. In less than one-third the average depletion period of 34 days the young rats showed advanced xerophthalmia, marked keratinization of epithelial tissues, generalized abscesses in the upper respiratory and digestive tracts; particularly was there a yellow pus-like material found in the tongue, soft palate and salivary glands. There appeared also a marked atrophic condition of the salivary and pancreatic tissue, the glandular tissue appearing as minute opaque white areas in a transparent mass. Mastoid involvement was a constant finding.

Xerophthalmia is the external manifestation of the advanced stages of vitamin A depletion and is indicative of far more serious internal conditions, such as the deceased or lost functional ability of the epithelial tissue of the body, especially of the respiratory and urogenital tracts with subsequent secondary infections. It would appear then, that for optimal nutrition of the young the mother must be provided with an adequate diet which will enable her to provide for the maximum storage of vitamin A in her offspring during the gestation as well as the lactation period. Furthermore, the transitional dietary of the baby must be very potent in this important food constituent and where diluted cow's milk formulas are used vitamin A carrying foods should be added regularly to the dietary.

No quantitative data are available on either the storage of the different vitamins in the body of the infant nor in the daily requirement. Since all newborn mammals are nourished with milk, and the human infant is dependent upon and sustained through the first year of life on a diet consisting in a great part of milk, it is, therefore, essential for optimal growth of the child to have a liberal supply of milk of adequate quality. Milk irrespective of source is not always the ideal pabulum for the well-being of the young; that it is not always complete in respect to all necessary biological properties is observed clinically upon women with beriberi and in lactating animals fed upon vitamin deficient diets. Therefore ,a comparative study of feeding human and cow's milk to standard test animals in varying quantities, under controlled conditions, serves to evaluate the relative vitamin content of these infant foods in terms that are comparable with other food materials. It takes from 25 to 35 c.c. of breast milk or 20 to 25 c.c. of cow's milk daily to suffice for vitamin B in the growing rat. Even these large quantities have been found insufficient to satisfy all the vitamin B demands of a mother during the active metabolic period of lactation and the rapid growth period of her young.

Vitamin B is stored in the animal body to a very limited extent only. Available data demonstrate that the rapidly growing individual needs more of the specific vitamins than the adult and that the vitamin B requirement of the lactating rat is 3 to 5 times its growth needs. In view of the above facts, the value of maintaining a sufficient amount of vitamin B to satisfy the growing demands of the baby cannot be over-emphasized when we consider that during the first year of life the greatest relative post-natal growth of the human organism takes place.

The faulty diets of the human race are not examples of a single but of multiple dietary deficiencies; a slight insufficiency of any one of these over a long period of time may produce effects as serious as conditions resulting from a wholly inadequate diet. The underfeeding of one or all of the vitamins results in serious consequences to the organism, the advanced lesions and symptoms of which are fairly well understood, whereas the full consequences of the borderline conditions are merely conjectures. The period of growth in the human is extraordinarily long as compared with that of the young of any mammals among the lower animals. This long period of growth doubtless is a factor of safety, since the opportunity for recovery from faulty nutrition at any time during early life is relatively great, because of the long interval during which growth is possible.

SHOULD EXTRACTION OF TEETH END OUR SEARCH IN THE JAWS

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It is the common opinion among the laity and unfortunately among the medical profession that, as soon as the infected tooth or teeth are extracted, the patient should get well. Very often, there is considerable relief experienced by the individual following the extraction of the abscessed tooth. The patient, who has previously experienced relief upon extraction of the tooth, may be disappointed by a recurrence of the disturbance. This follows when the drainage his not been thoro and when the aveolus fills with granulation tissue and heals. Furthermore, the symptoms may remain latent for quite a long time, because drainage has taken place and because the worst of the infection has been removed. When symptoms reappear, a change of site or a milder type of infection may show up. After the tooth has been removed, this area in the jaw is almost always forgotten, when another examination is made.

One should consider that areas in the jaws are without external drainage (where the pus is completely bottled up with no place to drain except into the blood). This residual infection is much more dangerous than tonsils (where the crypts are patent and coughing or sneezing will drain them), or more damaging than a diseased gall bladder (which has an outlet into the intestines), or a chronic appendix draining into the cecum, or chronic sinuses draining through the nose, etc.

I am, therefore, inclined to believe that these bottled up areas in the jaws are just as, in fact, much more important for investigation by the internist than any of the aforementioned ailments. The idea that the tooth is removed and that there cannot be any more infection remaining is wrong. Bearing this in mind, I was fortunate enough to locate foci of infection which has been overlooked, or had been passed up as insignificant.

From the history, one is led to believe that the systemic trouble followed the extraction of a tooth. Very often, we find it difficult to convince the patient of this residual infection in the jaw, because they are free from pain. Occasionally they have a sensitive area and are inclined to blame the plate or bridgework. But the films and the cultures obtained are the only means to determine the importance of these areas. The film must show details in order to bring to light these insignificant areas of residual infection. An over or under exposed or an over or under developed film, or poor illumination when inspecting films may give you gross facts like a cystic degeneration but the details are missed and so the focus of infection is overlooked. Therefore, it is very important to have proper films and good illumination for study.

In my case reports, I am giving a few recent cases to show the sudden change for the better upon removal of the focus. I wish to make this article a stimulus for search in this particular angle of foci of infection and not a report of old or recent cases. I shall not make a lengthy treatise by referring to conditions relieved upon removal of infected teeth, because I am trying to drive home the fact that: "Our Search in the Jaws Should Not End Upon Extraction of One or All of the Teeth." Diseases due to this condition are much more common than we realize.

RESUME OF CASE REPORTS

Case 1. Mrs. S. R., white, 47 years old, weight 157 pounds, married, first seen May 23, 1927. Complaining of pain in right sacroiliac joint for past six months. Had had many physicians, was in a hospital with a cast on pelvis and thigh for six weeks and pain slightly relieved but still unable to walk. Past history reveals—Tonsillitis and colds frequently, T. and A., ventral fixation and appendectomy five years ago, felt well up to one and one-half years ago, then had all upper teeth extracted because of decay. Patient claims she always had a taste of pus in her mouth upon removal of upper plate. Examination—Sclerosis of both drums, hypermetropia. Upon inspection nothing could be found in the upper jaw to suspect a sinus. Pharyngitis, sinuses cloudy, intumescent rhinitis, B. P. 126/76, anterior cervical glands palpable, icteric and petechial spots over entire body, rales throughout both lungs, systolic murmur heard best at base. Spastic condition of spinal muscle of right side low down, tenderness on pressure over right sacroiliac joint. External hemorrhoids. Slight varicosity of both legs. Blood shows Hg. 95%, polys 52, small 42, large 4, transitional 1, eosin, 1. Teeth smear shows streptococci. Urine analysis—Sp. Gr. 1.018, albumin negative, sugar negative, amorphus urates, uric acid crystals. X-ray of jaws by H. H. Jackson who gave the following report: "The upper right second molar region and the cuspid fragment also the lower right first molar region shows areas of change such as we believe should be thoroughly curetted if all possible sources of infection are to be removed."

Upon removal of the fragment and curetting both areas from which we obtained a streptococcus and a discharge of watery substance, the pain in the side subsided and under ultraviolet ray and baking treatments this patient is free from pain and able to be about and do her work for the first time in eight months and is rapidly improving.

Case 2. Mr. M. D., white, 30 years old, weight 169 pounds, married, first seen January 23, 1927. Complaining of sensitivity above the navel. Had been operated on with removal of appendix five years ago, Mayo Brothers did a gastroduodenostomy and excision of a duodenal ulcer March 13, 1926. Tonsillectomy, about six years ago, had a tooth extracted because of a toothache, never was sick prior to this tooth extraction. Examination—Few filled teeth, some tonsil tissue present, chronic pharyngitis, B. P. 100/66, heart slightly hypertrophied, no murmurs heard, spastic colitis, cryptitis. Gastrointestinal X-ray did not show any abnormality at this examination. Urine analysis—Sp. Gr. 1.022, albumin negative, sugar negative, granular casts, amorphous urates, mucus, blood Hg. 92%, polys 58, small 37, large 4, eosin 1. Red cells 6,880,000, white cells 10,200. On April 20, 1927, I was called to see the patient a second time. He was very nervous, had cramps, faintness, asthenia, and black tarry stools. Soon after my arrival he vomited a considerable amount of blood. Morphine (which caused a severe urticaria and itching the following day) was given by hypo and patient quieted down. Blood taken the following morning showed Hg. 81%, polys 79, small 12, large 7, transitional 2, red cells 5,480,000, white 15,000. April 28, 1927—Hg. 64%, polys 62, small 21, large 12, transitional 3, eosin 2, red cells 4,400,000, white cells 6,500. April 18, 1927—Patient came to the office, another gastrointestinal X-ray was taken. At this examination there was a niche at the pyloric end of stomach on the greater curvature. There was a tendency toward an hour glass type of stomach, and a spastic condition of the descending colon. X-ray gave evidence of an ulcer at the pyloric end of stomach on the lesser curvature. May 18, 1927—Hg. 44%, polys 63, small 29, large 5, eosin 1, myelocytes 2, megaloblast and normal blast 10 to every 100 white cells counted, also anisocytosis and poikilocytosis. Red cells 3,760,000, white cells 5,800. Smear from gums—streptococci, fusiform bacilli, and spirochetes. Weight at this date 159½ pounds. Patient still complains of sensitivity above navel. An X-ray of all his teeth was taken by Dr. H. H. Jackson who reported as follows. "There are areas of decreased density such as are usually associated with residual infection in the upper right first molar region and the lower left second bicuspid region." On June 13, 1927, the pus pockets were drained and a culture was made giving a growth of streptococcus viridans and staphylococci. A vaccine was made. He was receiving ultraviolet ray and was on an ulcer diet but the sensitivity did not seem to stop. Upon giving him the vaccine, the sensitivity miraculously disappeared and up to the time of this writing has not reappeared. Patient started to gain weight and is feeling better. July 14, 1927—Red cells 4,808,000, white cells 8,500 Hg. 57%, polys 49, small 45 large 6, weight 169½ pounds. Recently, the patient had a diarrhoea caused by some food, but there was no evidence of blood in the stool.

Up to the time he received the vaccine he did not seem to make any headway. He complained of this sensitivity above the navel and could not wear a belt. Soon after giving the vaccine or soon after draining the minute abscess in the jaw, he gained weight, he could wear a belt and became cheerful and elated because his sensitivity had disappeared. He is on a more liberal ulcer diet. It is too early to claim results in this case, but I have reported it not because I feel he is cured but because his sensitivity is relieved for the first time in about five years, brought about by draining the abscess.

Case 3. Mr. A. J., 63 years old, weight 160 pounds, white, married, first seen May 9, 1927. Complaining of nervousness and weakness also rheumatic pains all over the body. I shall not give the history here because it has no bearing on the point in question, but the X-ray has and therefore here is the report of Dr. H. H. Jackson, "The upper left cuspid is unerupted. The coronal portion of this tooth shows roughening although the crypt is not enlarged. We believe this roughening is indicative of pressure and as such must be considered as a possible factor in nerve reflex disturbance. The lower first molar region shows a registration suggestive of a retained root. There is an area of decreased density beneath it suggesting an infective condition. There is a small foreign body in the lower left cuspid area with decreased density surrounding it; the same is true of the upper right first bi-cuspid region."

Here is a man with all his visible teeth extracted and never before had an X-ray of his teeth to determine any abnormality. Undoubtedly, his rheumatic condition is caused by this residue of infection but we cannot get co-operation to determine if possible the actual relation of the infection and retained unerupted tooth to his rheumatic condition and nerve reflex respectively.

Case 4. Mrs. B. F., white, 47 years old, weight 118 pounds, married, first seen February 26, 1927. Complaining of severe migraine. Examination was negative except for X-ray report by Dr. H. H. Jackson, "We note retained fragments of the upper right first molar area. The buccal fragments show changes such as usually indicate infectious conditions."

We could not get co-operation to determine the relation of the retained infection to the migraine. The migraine dates back twenty years. The extraction of these teeth date back twenty-one years.

Case 5. Mrs. L. R., white, 56 years old, weight 123 pounds, widow, first seen February 12, 1927. Complaining of hot flushes of face, headaches, dizziness. Examination—Sclerosis of both drums, chronic rhinitis and sinusitis, hypertrophied septic tonsils, pharyngitis sicca, tortuosity of blood vessels of both fundi, no teeth, anterior cervical glands palpable, icteric and petechial spots over entire body. 218/98. Cardiac apex at level of anterior axillary line, with first and second sounds equal, no murmurs heard, atrophic liver, tenderness over sigmoid area of descending colon, considerable flatus. Vaginal examination showed a second degree laceration which had not been repaired with adhesions of the posterior surface of vagina to anterior lip of cervix, uterus fixed to posterior wall. External hemorrhoids. Fluoroscopically the aorta was enlarged with the heart markedly hypertrophied, the diaphragm moves sluggishly as if adherent. Hg. 79%, polys 46, small 50, large 3, eosin 1. Urine analysis—Sp. Gr. 1.004, albumin one plus, sugar negative, pus cells, epithelium, amorphous urates, granular casts, hyaline casts. Advised X-ray of both jaws. Dr. H. H. Jackson reports as follows: "The upper right second molar and cuspid regions show changes which might be indicative of an infectious condition but they are not as well defined as customary. The upper left cuspid region shows spicular formations but we believe this is from traumatic influences. There is a fragment of the lower left first molar retained but this shows no pathological changes. The lower right shows a localized infiltration of the crest of the bridge."

The patient was put on a Mosenthal diet. April 7, 1927—Tonsillectomy was done. Tooth fragment was extracted. On April 9, 1927—B. F. 146/86, while in bed. May 17, 1927—B. F. 156/74. Weight 125¾ pounds. Feels better. June 10, 1927, Urine—Sp. Gr. 1.012, albumin trace, sugar trace, pus cells, amorphous urates, epithelium, cylindrosis. July 12, 1927—B. P. 160/86.

This case is reported because of the retained root fragment and not because of the certain amount of relief obtained by tonsillectomy and extraction of the root. (For I feel that the relief was brought about by both, not one or the other).

CONCLUSION

Let us all learn a lesson from the above to check every patient anew and not take for granted nor assume anything in our medical examinations. We may thereby lose sight of the most important clues in diagnosis.

GYNECOLOGICAL BLEEDING

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The object of this paper is an effort to clear up confused conceptions, concerning gynecological bleeding, to standardize its terminology, and eventually to make uniform the treatment. I think such an effort is worthy, and should receive the sympathetic co-operation of all gynecological clinics and diagnostic pathological laboratories.

The diagnosis of pathological bleeding is not always an easy task. The alleviation or cure is not constant and permanent. However, satisfactory therapeutic results may be obtained if we avoid purely routine treatment and consider every individual case from its etiological standpoint and treat it accordingly.

The most important thing is to take an exact and painstaking history. The notation "hemorrhage" or "excessive bleeding" is not sufficient. We must designate the duration of the interval between bleedings and profuseness of the bleeding, in other words, the type of bleeding. Also knowledge of the type of normal bleeding before the pathological bleeding commenced is of value. This will help us to differentiate a pregnancy bleeding from a gynecological bleeding. The overlooking of a ruptured ectopic or a beginning neoplasm will be thus avoided.

A painstaking history will reveal three types of bleeding in women:

1. *Hypermenorrhea:* The woman's normal type as to menstrual interval is maintained, but the bleeding is excessive or of longer duration.

2. *Polymenorrhea:* The interval is shorter or not always regular.

Poly-Hypermenorrhea: The interval is shorter and the quantity is increased.

3. *Metrorrhagia:* The type of bleeding is regular, continuous. Intermenstrual bleeding is rare and may be classified under Metrorrhagia.

The three types are distinguished by their etiology.

HYPERMENORRHEA

Its cause is to be found in the unequal distribution of the blood. *First* in the condition of *passive hyperemia,* where we find the blood vessels of the small pelvis overfilled. We find this in heart lesions, especially decompensated valvular lesions and myocarditis, in lesions of the lungs, as in emphysema, chronic induration; in kidney lesions, liver insufficiencies (especially cirrhosis), varicosities as often seen in the greatly dilated venous plexus of the small pelvis during operations, especially the varicosities of the spermatic. (Fig. 1).

Figure 1
Varicositis of blood ligaments—(spermatic and pampiniform vessels).

Second, the *active hypermia* caused by vascular adhesions in the neighborhood of the uterus-perimetritis—as a consequence of pelveoperitonitis. (Fig. 2A and B). We find this condition following appendi-

Figure 2A
Acute purulent pelveoperitonitis

Figure 2B
Chronic pelveo peritonitis

citis, salpingitis and other inflammatory processes in the pelvis and its immediate vicinity. (Fig. 3). Endometritis very

Figure 3
Double pyohydrosalpinx. Chronic Adhesive perimetroophoritis

seldom, if at all, causes hypermenorrhea. As I have often pointed out, we do not find a chronic endometritis as a clinical entity. If we do find an endometritis, it is as a consequence of a general inflammatory process of some or all the genital organs. (Fig. 4). If this condition is present, it will cause a poly and not a hypermenorrhea. We also find an active hyperemia in parachrestic sexual life, exemplified by too frequent coitus, coitus interruptus, and masturbation. Also in plethora and essential hypertension.

Third, *Hyperfunction* of the ovaries. We have heard lately from Louis Klein, who reviewed the work of E. P. Bugbee, Charles R. Stockard, George N. Papanicolaou, L. Loeb, and the Washington University school, that the blood circulation in the genital organs depends upon the ovarian cycle. There is reason to believe that a hyperovarian function might be the cause of a uterine bleeding. As causes of a hyperfunction of the ovary might be mentioned an increased libido, inflammation causing functional disturbances, nervous and psychic factors, etc.

Another class of hypermenorrhea is due to *local causes* in the uterus. There is no question that the regeneration of the endometrium alone is not sufficient to cause hypermenorrhea, but the contractibility of the uterine muscles is essential in arresting the bleeding by contracting the open blood vessels postpartum and in a smaller degree during menstruation. Thus we see that anything which will reduce the contractibility of the uterus will increase the bleeding during menstruation. This is really the case in infantile and hypoplastic uteri where we find an inferiority of the muscle development and an increase in the connective tissues (Asthenia). Also fibrosis of the uterus caused by inflammatory processes, etc., as well as intramural myoma will cause hypermenorrhea. (Fig. 5 A, B, and C). The latter also interferes with the contractibility of the uterine muscles. Malposition of the uterus does

Figure 4
Chronic adhesive perimetro-oophoro-salpingitis with myoma of uterus

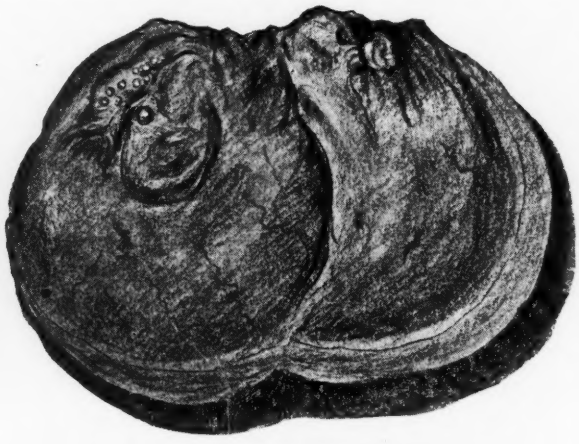

Figure 5A
Intermural submucous haemorrhagic myoma

not cause bleeding unless it is associated with asthenia. We know that asthenia predisposes to ptosis of all kinds, as well as to malpositions and hypotony of the venous system. In these cases, the whole supporting apparatus is inferior and a malposition will easily take place.

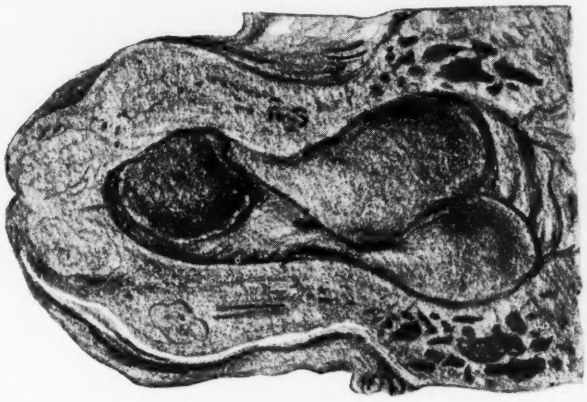

Figure 5B

Intramural-submucous and polypoid forms in Myomalosis of the uterus

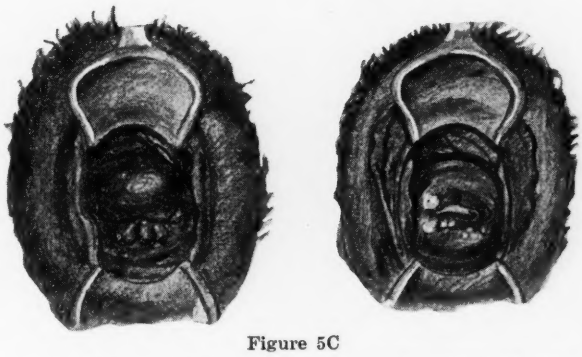

Figure 5C

Mucous polypi Simple erosion with nabothian follicles

Pathological Anatomy: The microscopic examination of the curettings is very important, as a negative finding will exclude a local cause, while we may often detect by it a tuberculosis, an infectious endometritis, signs of an abortion or an early neoplasm. It will also disclose the stage of the cycle, either premenstrual (pregravid, decidual) or postmenstrual. The possibility of making a diagnosis of functional disturbances from the curetted endometrium is based upon the fact that the endometrium undergoes structural changes which depend entirely upon the cyclic ovarian changes such as ripening of the follicle and ovum, rupture of the follicle, corpora lutea formation and absorption. (Fig. 6).

POLYMENORRHEA

Ovarian etiology: Hypermenorrhea may be caused by an ovarian dysfunction, or hypofunction, but in polymenorrhea we usually find a disturbed ovarian cycle. The cyclic changes of the ovary,

Day	Ovary	Day	Endometrium	Ovum
1-14	Ripening of Follicle	1-3 4-7	Desquamation bleeding Regeneration	
14-26	Rupture of Follicle	8-18	Proliferation	Discharge of Ovum
17-23	Development of Corpus Luteum	8-24	Secretion	Emmigration of Ovum
24-28	Corpus Luteum at Maturity	24-28	Pre-menstrual stage (phase)	28-Death of Ovum.
1	Corpus Luteum Involution. Beginning of Ripening of Grafian Follicle	1	Desquamation	

Figure 6

uterus and vagina depend upon two definite stages, namely, first, the ripening of the follicle and expulsion of the ripe ovum, second, the corpus luteum formation, maturation and degeneration. The first phase takes place, in the twenty-eight day type of menstruation, between the 1st and 14th day. (Fig. 6). From the 17th to the 23rd day we have the corpus luteum formation which reaches its height on the 28th day. After that day, the corpus luteum degenerates with the beginning of the new cycle. Depending upon the ovarian cycle, the morphological changes in the uterine mucosa are very definite. The ripening of the follicle causes a proliferation of the endometrium from the 16th to the 18th day. After this the phase of secretion takes place which ends with the premenstrual and pregravid changes expressed by a young pregnancy-decidua. The latter desquamates at the same time with the degeneration of the corpus luteum. If the ovum is not impregnated the disappointed uterus bleeds.

A shortening of the interval between two periods may be caused by an equal shortening of the two main phases of the ovarian function. This may still be considered as physiologically normal or nearly so. But, if the two cyclic phases are unequally shortened, especially the second, or secretion phase, which means a shortening of hypofunction of the cyclic life of the corpus luteum and at the same time a premature death of the ovum, then polymenorrhea is the consequence.

So we see that polymenorrhea and polyhypermenorrhea depend upon the abnor-

mal cyclic changes of the ovary. Clinically, we find these abnormal uterine bleedings during inflammatory processes of the genital organs caused by infection, especially gonorrheal adnexititis, ovaritis, and periovaritis, also epityphilitis, perityphilitis and appendicitis. (Fig. 7). But

Figure 7
Pelveoperitonitis perioophoritis perisalpingitis and right pyosalpinx

it is important to add that the cyclic changes of the ovarian function may be influenced to a great extent by the psychic influences caused by the perverted (parachrestic) sexual life woman is now more than ever compelled to lead. Further, how much the disturbed function of the ovary depends upon the other members of the endocrine symphony is still an open question. The thyroid gland undoubtedly has some influence upon the quantity and regularity of uterine bleeding. Although cases of amenorrhea are known which were caused by a hyperfunction of the thyroid and cases of excessive bleeding were due to a hypofunction of the same endocrine gland, still, we very often meet cases of hyper and polymenorrhea as complications of simple adenomatous goiter, and exophthalmic goiter.

METRORRHAGIA

This abnormal uterine bleeding occurs at any time from the menarche to the menopause and even after that period. This bleeding always shows some anatomical pathology either in the uterus or in the ovary or both.

Anatomical Pathology of the Uterus:

Metrorrhagias of the parous woman between the age of 20 to 45 years are due to interrupted pregnancy. The usual causes are threatened and incomplete abortions, subinvolution of the decidua after birth, abortion with or without retention of chorion, extrauterine pregnancy and chorio-epithelioma. In another group of cases we detect benign or malignant neoplasms of the cervix or fundus uteri. Among the benign tumors, we may mention polypi of the cervix or fundus, (Figs.

Figure 8
Subserous polypoid fibromyoma of the uterus

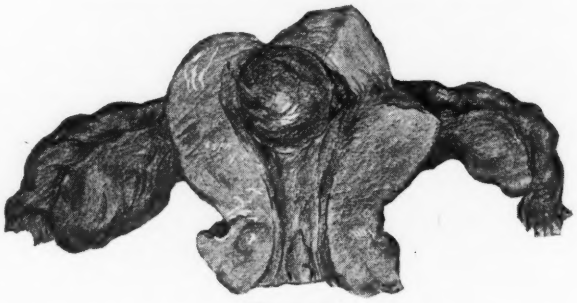

Figure 9
Multiple polypoid myomata producing uncontrolable bleeding in the climacteric uterus with chronic metritis

8 and 9) and submucous myomata. Fig. 10). The bleeding in these cases comes from the greatly dilated blood vessels in the tumor capsule. The hemorrhage is often so great that the woman shows a very severe anemia. (Fig. 11). The usual menstrual flow in metrorrhagia is usually not disturbed on account of the normal function of the ovaries. Among the malignant tumors which cause bleeding we may mention carcinoma of the cervix and fundus. The menstruation type

Figure 10
Submucous myoma in an amputated uterus

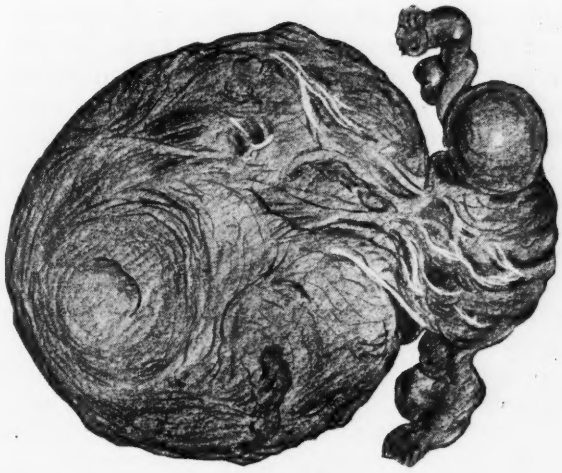

Figure 11
Myomatous uterus radically removed showing marked anemia due to hemorrhage. Note: Myomata at tubal insertion

is not lost even in women suffering from these tumors. There is always an intermenstrual fetid discharge in these cases. Bleeding is usually the first symptom of carcinoma of the cervix. The cure of a malignant neoplasm depends entirely upon its early diagnosis and treatment, therefore it is most important that a woman with a metrorrhagia should undergo a thorough, painstaking examination in which should be included a biopsy or curettage or both.

Functional Pathology in the Ovaries: In these cases neither palpation nor inspection will help us to find the cause of the metrorrhagia. The history will usually show that the patient has menstruated normally, then has had an amenorrhea of from 6-12 weeks followed by a more or less severe bleeding in the form of a metrorrhagia. The severity of the persistence of the hemorrhage will weaken the patient and cause a severe anemia. We must be very careful in these cases with our differential diagnosis, lest we confuse them with pregnancy, especially extrauterine pregnancy, and abortion, on account of the softness and enlargement of the uterus, and the discoloration of the cervix and vaginal mucosa. We find this form of metrorrhagia in young girls from 15-20 years of age and in women shortly before the climacterium. The former is called juvenile or puberty bleeding, the latter preclimacteric or menopause bleeding. Naturally, we will exclude malignant tumors, especially in the preclimacteric hemorrhage. (Fig. 12).

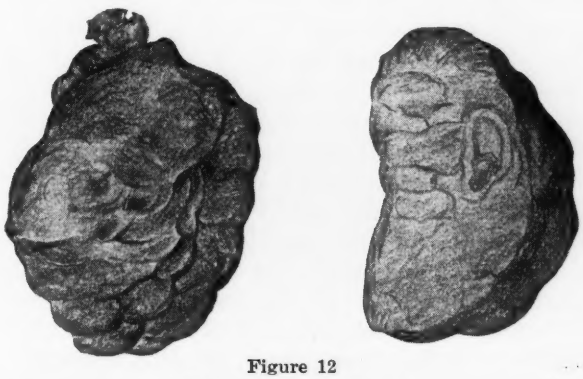

Figure 12
Sarcoma of the Ovary

Pathological Anatomy: In both forms, in the juvenile and the climacteric bleeding, we have the same pathology. In the ovary we do not find a corpus luteum. We do find many ripe follicles, which take on the character of small cystic degeneration, and which are unable to expell a normal ovum. As I mentioned in my paper on sterility, "the egg is choked in its shell." This is a functional disturbance of the ovary consisting of the inability to rupture the follicle, and therefore resulting in the nonformation of the corpus luteum which causes a persistent ripening of the new follicles. The ripening of the follicle goes hand in hand with the proliferation of the endometrium and a cystic formation of the uterine glands (glandular-cystic hyperplasia). A necrosis of the highly thickened endometrium follows, accompanied by a great dilitation of the blood vessels, which rupture and cause the bleeding. As you see, this is entirely an abnormality of the ovary, and the bleeding is therefore called ovarian, or still better, "ovariell", or functional, because the etiology of this form of bleeding is the pathologically changed uterine mucosa caused by the abnormal function of the ovary. In the juvenile bleeding the normal function has not yet been properly established, while in the climacteric bleeding the normal function has been lost. In both forms the etiology is the same. The spontaneous cessation of the bleeding in juvenile cases takes place as soon as one of the follicles rupture, a corpus luteum forms and the interrupted normal cycle is restored. The abnormal preclimacteric bleeding ceases as soon as all the primordial follicles are exhausted, and the abnormal ones are obliterated and absorbed. This causes an atrophy of the uterine mucosa which cannot bleed any more.

Treatment: With one exception, there is nothing new at the present time in the treatment of gynecological bleeding. It is either medical or surgical or both. This type of treatment is too well known to require mention here. The exception is the use of insulin in the nondiabetic patient.

It is applied very successfully in that form of bleeding called "ovariell or functional" which depends upon the hypofunction or dysfunction of the ovaries. Insulin has a monoglandular as well as a pluriglandular action. It acts mainly on the carbohydrate metabolism, but has also a great influence upon all wasting diseases, acquired and constitutional, as cancer, tuberculosis, asthenia, etc. The cancer cells are every hour transforming 12 per cent to 15 per cent of their own weight of sugar even in the absence of oxygen into lactic acid, thus depriving the body of the necessary carbohydrates. If insulin is used, there is an augmentation of the native supply of insulin in the body, and the cancer patient benefits; either because the carbohydrates are utilized for the benefit of normal metabolism and the cancer cell suffers, or the extra supply of insulin enables the body to utilize more carbohydrates than it otherwise would and therefore the carbohydrate deficiency is compensated—in other words, the relatively increased metabolism of the cancer cell does not have a chance to deprive the body of food. Whichever explanation is true, we must say that there is no growth of cancer cells without a glycosis. The increase of lactic acid in the body in all other wasting diseases leads us to believe that the action of insulin prevents the formation of lactic acid, or oxidizes it. It utilizes the carbohydrates for the benefit of the organism and the patient gains in weight.

In refractive diabetes, we are not dealing with a diabetes at all. There is either a hyperfunction or dysfunction of the thyroid. Exophthalmic patients as well as patients who have been fed on thyroid show a hyperglycemia produced by abnormal mobilization of glycogen from the liver and other organs. The hyperglycemia cannot be reduced unless the excessive amount of thyroidin is removed from the body. If a true diabetic whose hyperglycemia has been made normal by the administration of insulin is given thyroid, the hyperglycemia will reappear and cannot be reduced until the administration of the thyroid is stopped and the excess of thyroidin is eliminated from the body or a very large dose of insulin is given to overcome the action of the thyroidin. If the administration of insulin is discontinued, the thyroidin will still act for four days from the day of its administration and sugar will reappear.

The polyvalent action of insulin is demonstrated very nicely by its application in gynecological bleeding due to hypofunction or dysfunction of the ovaries. Twenty to thirty units of insulin administered twice a day shortly before the noon meal and evening meal for three to four days will stop the bleeding very promptly. It is administered before meals in order to prevent a hypoglycemia. The carbohydrates of the usual meal will cover any ordinary excess of the insulin given. If in an oversensitive patient a hypoglycemia should occur, manifested by weakness, nervousness, bulemia, tremor, vasomotor disturbances in the form of heat alternating with a sensation of cold, palpitation of the heart, perspiration and vomiting, then a piece of sweet chocolate, a small quantity of orange juice or any other concentrated carbohydrate given by mouth will promptly relieve the patient.

There are no contraindications for its use. We have given it to patients suffering from tuberculosis as well as to patients with vasoneurotic diatheses. It has no deleterious action on the normal menstruation.

The differential diagnostic value must not be overlooked. If the expected action does not take place, then we are sure to be dealing with a sub-mucous myoma, a uterine polyp, endometrial sarcoma or carcinoma of the fundus.

The hemostatic action of insulin in gynecological bleeding cannot be explained in terms of its chemical action. The hormonal action alone on the various endocrine glands must be considered. The vegetative nervous system, influenced by the mechanical irritation of the rhythmic menstrual uterine contractions, causes a hyperglycemia. The pancreatic hormone sensitizes the vegetative nervous system causing the uterine contractions and hyperglycemia. The internal secretory action of the ovary which influences the whole endocrine system during menstruation causing endometrial bleeding is responsible for the sensibility of the visceral nervous system. The work of Stockard, Papanicolaou and the St. Louis school as cited above shows that the ovarian hormone from the wall of the follicle gets into the blood-stream and in this way supplies the whole body. After rupture of the follicle the follicular fluid which is poured into the abdominal cavity is absorbed by the lymphatics and also carried to every part of the body. So we see that the vegetative nervous system is influenced by the uterine contractions and by the internal secretion of the ovary during menstrua-

tion, causing a vagatonia. That the ovarian secretion has an influence on the whole endocrine symphony is shown by the change of the calcium content of the blood during the normal menstrual cycle as compared with the normal cycle in hypomenorrhea, oligo-, opso- and amenorrhea. The ovarian dysfunction or hypofunction causes a disturbance of the suprarenal, thyroid and pituitary glands. This again changes the normal calcium content of the blood. The normal calcium content of the blood does not depend upon the ovary alone, but upon the whole endocrine system. This can be shown in the castrated female. Soon after castration the calcium content of the blood changes, to return to normal again within one year after the castration. The chromosomes take over the ovarian function and equilibrium is again established. The insulin influences the internal secretion of the ovary during menstruation and indirectly the function of the whole endocrine system and the irritability of the vegetative nervous system. The latter depend again on the calcium content of the blood. The insulin diminishes the menstrual hyperglycemia and reduces the amount and duration of the bleeding.

The close relationship between the pancreatic and ovarian hormones is supported by the very important fact that if insulin is injected into a test animal, (rabbit or dove), it is rendered temporarily sterile. The histological examination of the ovaries after the injection of a moderately large dose shows that organ to be very poor in ripe and rupturable follicles. The pancreatic hormone arrests the follicular function and consequently acts as a contraceptive. This throws a new light on the collective action of the endocrine products, and our views on sterilty from a constitutional standpoint will have to be changed.

In conclusion, I wish to express my appreciation to Mr. Zolton de Sepeshy for his colored crayon reproductions of drawings from Lehman's Atlas.

LORD LISTER'S INFLUENCE ON MODERN SURGERY

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A true conception of Lord Lister's influence on modern surgery can only be obtained by considering what surgery was previous to the time he began his career as a surgeon. Surgery then was practically the same as it had been practiced from the beginning of history. All surgical intervention was looked upon with horror and was undertaken almost entirely as a last drastic measure for the saving of life. Surgeons were thought and spoken of as men to be dreaded and hospitals as a place to die. Admission to a hospital then meant a fight against an infective or septic disease of the wounds.

The great majority of cases developed within a few days, depending upon the treatment, nature of injury and the resistance of the individual, one of the so-called hospital diseases. These were at this time erysipelas, pyemia, septicemia, hospital gangrene or tetanus and were naturally the dread of every patient and every surgeon.

Erysipelas varied from the angry flush which spread over the face to the most extensive cellulitis which involved the subcutaneous and muscle tissues of the body requiring counter openings for drainage. This meant much suffering on the part of the patient and usually a fatal termination. Pyemia and septicemia meant a series of chills and fever with death as an end result. Hospital gangrene occurred in epidemics. It spread rapidly from the wound having a peculiar pale gray color. Tetanus was not of infrequent occurrence. There was a peculiar putrifactive odor throughout the surgical wards. Most of the patients were noticeably ill, having flushed faces, parched lips, delirium, wretching and moaning with pain and many of them on the verge of death.

In the operating room, sterilization was a thing unknown. Instruments were used without any special preparation. The surgeon kept an old frock coat which he used for operating. It was covered with blood and dirt and he was proud of it in that condition. He simply put on this coat, rolled up his sleeves and was ready to operate. In the wards where dressings were done the dresser went from case to case, using the same instruments for all cases. There was no isolation of the different cases, the non-affected patients being placed without discrimination among those affected with one or all of the prevalent hospital diseases. The result was that uninfected cases were almost impossible to find. Conditions became so bad at times that it was deemed necessary to close entire wards to stop the frightful mortality. It was then unknown that these diseases were caused

by living organisms and that infection was being spread on every hand.

Such was the condition of surgery when Lister began his work and it was this bad state of affairs which made from the first, a deep impression upon his clear thinking, conscientious mind. His very first case as a dresser was phagedenic gangrene, one of the most terrible of all septic diseases. He determined then, to devote his time and life to see what he could do to lessen the ravages of the septic diseases. He realized the gravity of even the simplest of operations and that before any progress in surgery could be made the great obstacle of sepsis would have to be conquered.

The prevalent idea then was that the air contained something which was the cause of it all. Lister noticed, as did other men before him that in cases of simple fracture where the skin was unbroken, it healed without sepsis and in cases of compound fracture they all became septic. Their only method of treating such cases was amputation and the mortality from amputions varied from thirty to fifty per cent, death being caused by one of the septic diseases.

While Lister was pondering over the cause of sepsis, a friend of his, Dr. Thomas Anderson, Professor of Chemistry at Edinburgh, called his attention to the work of Pasteur, which had proved that fermentation and putrefaction was caused by living organisms. He at once grasped the idea that such a thing might have an important bearing on septic wounds. Lister with these facts in mind concluded that the germs of fermentation and putrefaction must be the cause of sepsis in the wounds and the way to attack the problem would be to devise some method which would prevent the germs from entering the wounds either during or after operations. He also realized that if they had succeeded in getting into accidental wounds such as compound fractures, they must be killed before they had time to spread. His next thought was to find some method of doing this. He learned from Pasteur that heat would kill germs and that it was possible to remove them from the air by filtration, but he knew that neither of these methods could be applicable to wounds, so he turned his attention to chemicals. He chose carbolic acid because it had been used in sewage at Carlisle to prevent putrefaction with remarkable success.

His first case to be treated with carbolic acid was that of a compound fracture, a type of case which was extremely susceptible to septic disease. It was a failure, however, but not to be discouraged he tried it again on a similar case. This case had a small wound which he covered with a piece of lint that had been dipped in pure carbolic acid. He put the limb in splints and on the fourth day examined it and found it free from pus, with evidences of organization, and the wound continued to heal without delay. He followed this same procedure upon a series of cases with excellent results.

His next step was to apply the principle to surgical wounds, his idea being to destroy all organisms on the patient's skin at the site of operation. His first case to apply such a principle to was that of a woman with a psoas abscess, the mortality of which, previous to this time, had been almost a hundred per cent.

A piece of lint soaked in a mixture of carbolic acid and linseed oil in the proportion of one to three was placed over the site of the operation for some time previous to the operation. His hands and the hands of his assistants, his instruments and everything to be used during the operation were coated with the mixture of carbolic acid and linseed oil and he proceeded. The edge of the lint was carefully raised and he opened the abscess. The pus was then expressed and he took a mixture of pus and carbolic acid and filled the cavity with it. The following day the wound was clean. He continued using a carbolic acid dressing and the patient eventually recovered.

With these results it proved to Lister that a victory over sepsis had been obtained. He now spent his time experimenting with different forms of chemical antiseptics and extending his operative procedures to things unheard of before. He would open joints without hesitation, rectify badly united fractures, ununited fractures and deformities of bone. He wired recent fractures, excised joints for tuberculous caries, operated for varicose veins, did radical operations for hernia and extensive operations for cancer of the breast.

The results following all his operative procedures under antiseptic methods were remarkable. The mortality had been dropped beyond his expectations, hospital gangrene had disappeared, cases of pyemia and septicemia were greatly diminished and esysipelas was only of occasional occurrence. The putrid odor which was previously so characteristic of the surgical ward was replaced by fresh air and a sense of comfort prevailed among his patients.

Younger surgeons taught by Lister himself began to spread his teachings. Men from the continent came and studied his methods and carried them back with them and they obtained results equal to those of Lister. The German surgeons were especially enthusiastic about it and they in turn influenced many of the American surgeons who were then studying under them. Thus in a remarkably short time his antiseptic principles were spread throughout the entire civilized world.

From this dates our modern surgery. Abdominal surgery as we now know it, operations on the thorax, brain, and spinal cord and the exploratory operations have all had their development since the introduction of Lister's methods.

Today antisepsis has given way to asepsis. Everything used in the operating room is sterilized. Gowns, caps, towels, sheets, packs and compresses are sterilized in high pressure steam sterilizers. Rubber gloves and instruments are sterilized by boiling. Sutures are boiled or come in sterile ampules from the supply houses. The surgeon and his assistants before going into the operating room remove their street clothes and don white duck trousers, jackets, tennis shoes, masks and caps. Their hands are carefully scrubbed and purified with alcohol and then they slip on sterile gowns and gloves and are ready to proceed. The patient is brought in and anesthetized. The site of operation which has been previously shaved is scrubbed with alcohol and iodine and the operation follows. An operating room supervisor sees that the surgical technic is not broken by any one present. Under such conditions the surgeon can operate or explore any part of the human body with absolute assurance that no sepsis will take place.

With the question of sepsis obliterated, most of the operations are now operations of choice, designed to restore movements, to rectify deformities, to relieve suffering and to prolong life, making it more comfortable and more useful. Surgical wards are now a much different picture than when Lister began his career. The old hospital odor is gone, hospital gangrene is a thing unknown, erysipelas, septicemia and pyemia are rare, and the mortality is slight. The patients are happy and contented, looking as if nothing has happened. The surgeon is thanked because of the relief he has brought them, and the hospitals are no longer feared by intelligent people.

These results have not been limited to one nation or to one race, but have been extended to all civilization. For all of this we owe to Lord Lister a most glowing tribute for he has been of unspeakable benefit to mankind.

CASE OF DIPHTHERIA IN THE AGED

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KALAMAZOO, MICHIGAN

No doubt many physicians have had cases of diphtheria in the aged. However, this case is reported for that reason—the patient being eighty-two years old.

The report is as follows:

Mr. A. came to the office on June 14, 1927, with the complaint, "I have a sore throat"—this having been of two days' duration.

The patient was a stalwart gentleman—did not look sick, but acted tired out.

The throat was reddened and over the right anterior pillar and tonsil was a yellowish white membrane which was densely adherent. The temperature was 100, pulse 96 and respirations were normal. A swab was taken and a direct Loeffler's methlene blue stain made. Typical bacilli were present—being clubbed at both ends.

A swab was also sent to the city health office, where the diagnosis was confirmed by culture. Mr. White, the City Bacteriologist, did a virulence test and reported that the guinea pig died in twenty-four hours, there being necroses at the site of infection and hemorrhagic adrenals were present.

The patient was given 20,000 units of diphtheria antitoxin immediately and at night another 10,000 units—no change having been noted in the character of the membrane. However, he seemed able to swallow with less difficulty.

On the second morning, the membrane still being adherent, 10,000 units were again given into the gluteal muscle. The patient was seen the same night and the membrane was just beginning to loosen and shrink, but 10,000 units more were given and another 10,000 on the morning of the third day, making a total of 60,000 units of antitoxin.

The ordinary treatment for diphtheria was carried out and on the eleventh and twelfth days negative cultures were obtained.

This is ten weeks from date of onset and the patient is doing nicely, no complications having occurred. He is regaining his strength well.

COMMENT

Having reviewed the current text books and literature I have found no record of a case of diphtheria in a patient as old. The city hospital of Kalamazoo reviewed its records, and their oldest was an individual of sixty-seven years. Knowing that McCollum has treated as much diphtheria as anyone in the United States, a letter was written to the Boston City Hospital, where he did a large portion of his work, to learn their oldest incidence. Edwin H. Place, physician in chief, advised me that in the last twenty years he did not recall a patient of eighty-two years, but stated there had been cases around seventy in age.

SUMMARY

This case is reported because it is interesting from the standpoint of the patient's age and not because of any other unusual clinical manifestations.

MICHIGAN'S DEPARTMENT OF HEALTH

GUY L. KIEFER, M. D., *Commissioner* · *Edited by* MARJORIE DELAVAN

LABORATORY ACTIVITIES FOR THE YEAR

It is difficult to get a measurement of the service rendered by the Michigan Department of Health Laboratories to the individual practitioner, although it is recognized that the general service of the department is great. The figures submitted in this report will aid in showing the scope and amount of work done by the bureau during the fiscal year ended June 30, 1927.

A brief review of the work done at Houghton shows that there was a slight increase in practically all work except diphtheria and typhoid examinations, in which cases there was a decided decrease. The average number of examinations made by each of the scientific personnel for the year was 788 examinations per month.

A noteworthy addition to the laboratory service in the state was the opening on September 1, 1926 of an extension laboratory in Grand Rapids, known as the Western Michigan Division Laboratory. Exactly the same character of work is done as in the central laboratory in Lansing and its personnel is interchangeable with that at Lansing.

In deciding the location of the extension, railroad facilities were taken into account. Placed as it is, it receives specimens from most of the western part of the state without mail transfers and thus can give quick service. This great step in advance was made possible by the co-operation of the State Administrative Board and the city commissioners of Grand Rapids. The quarters furnished by the city commission are absolutely ideal. The old city hospital building was completely remodeled, giving the best possible arrangement for the installation of the scientific equipment furnished by the Michigan Department of Health. That this service has been appreciated is evidenced by the report of the Western Michigan Division Laboratory.

Much of the work done is for the city of Grand Rapids. This is especially true of the work in throat infections for the release of patients from quarantine in the contagious hospitals.

The number of milk samples examined is unusually large. Most of them come from the Grand Rapids area, but many, being examined in co-operation with the Department of Agriculture, are brought from nearby counties by the inspectors of that department. The Grand Rapids laboratory tests milk products, the examination including plate count, Babcock test and specific gravity.

An average of 1085 examinations per month was made by each of the scientific personnel at Grand Rapids during the year.

The work in the Lansing laboratory was appreciably lightened by the installation of the Western Michigan Division Laboratory, the number of examinations made in Lansing decreasing in all of the communicable disease work. A decided increase in the number of body fluids examined is indicated by the increase in animal inoculations. This figure represents, almost entirely, animals inoculated with specimens to show the presence or absence of tubercle bacilli.

A small increase in the number of blood chemistry examinations is visible, in spite of the fact that they were practically discontinued April 1. For a year previous to April, from 500 to 800 blood chemistry examinations were made a month. This was taking much time from work which was more directly related to public health. The usefulness of the procedure had been demonstrated and it was felt that local medical organizations and private laboratories should be called upon to do the work for the practitioner. Consequently blood chemistry was discontinued as one of the free diagnostic tests run in the laboratories of the Michigan Department of Health, but was continued on a fee basis, the regular commercial laboratory fee being maintained. While blood chemistry specimens are still received, they have decreased to about 30 or 40 a month.

Water and sewage work has increased, mainly due to outside influence. The Bureau of Engineering has continued its survey of the water supplies along the main highways of the state, and instituted, but only partially completed, a survey of the water supplies of the rural schools.

The problem of stream pollution is gradually developing. In co-operation with the Department of Conservation, this department collects and analyzes samples of water and sewage. After a study of the

character of the pollution and experiments to determine the best means of waste disposal, recommendations are made to the industries based upon the findings. Up to the present time, particular study has been given to tanning factory wastes and to those from milk products. Each of the industries raised a sum of money to be used in studying their wastes in an experimental plant under the supervision of this department. Many valuable facts were discovered by the work and both the industries and state gained thereby.

One of the new practical phases of the laboratory research work is the preparation of bacteriophage in the place of autogenous vaccines as a specific therapeutic for furunculosis, acne and other skin infections. When physicians send cultures from such infections for autogenous vaccines, Staphylococcus, if found, is tested for susceptibility to lysis of bacteriophage and if it is found to be susceptible, it is suggested to the physician that he try the bacteriophage instead of the vaccine. Many practitioners have used the phage and have requested it for their later cases rather than a vaccine. Bacteriophage for skin infections has been tried out in the various state institutions with encouraging results. It has also been used in the institutions in cases of discharging ears with seemingly good results. The latter phase is still in its infancy in study and experiment but seems sure to lead to an interesting conclusion.

Examinations in the clinic room of the laboratory have increased. Effort is made to keep such examinations as few as possible. No interference with physicians is possible, however, as only such patients are taken as have written requests from their physicians that certain specimens be collected or certain tests be made. There were 952 persons treated in the clinic room during the past year, including 160 from the Department of Health. The latter number represented persons in laboratory work receiving toxin-antitoxin, vaccines, Dick and Schick tests for the most part. The other 792 persons were those sent by their doctors for blood counts, Kahn reactions, sensitization tests for asthma and hayfever, Darkfield examinations, et cetera; state police for physical examinations: state employes for dressings to injuries sustained during duty.

The extension work of the laboratory has been continued. A class has been given for the nurses of the Lansing hospitals, meeting twice each week in the evening during the winter months. The nurses learn the uses of a public health laboratory and the handling of communicable diseases from a laboratory point of view. Classes are also given for students from Michigan State College. These consist of a 4-hour period daily, 3 days a week during a term. Public health methods are given in practical work and one lecture a week. An examination on laboratory procedure must be passed at the end of the term before credit is granted. During the past year six students enrolled in the course, four of whom were seniors and two, graduates.

The laboratory is visited each year by many interested in administrative problems of public health work and in certain methods in use here. During the past year the directors of four state laboratories each spent several days in the laboratory in observation of methods. We were also visited by five doctors traveling on a Rockefeller Fellowship, two from Bulgaria, two from Ceylon and one from Jugo-Slavia. A missionary from China stopped to learn the Kahn precipitation test as did a young medical doctor, a native of China, also the port health officer of Singapore. Each remained for at least six weeks.

The 1927 legislature passed several bills which indicate a widening of scope in the work of the laboratory. One provides that all laboratories where live pathogenic germs are handled be licensed. Before any pathogenic organisms are distributed the license number of the laboratory to which they are given must be known. The act, in addition to its main purpose of supervising places where infectious organisms are handled will bring the laboratories in the state into closer touch with the laboratories of the Michigan Department of Health.

A third bill provides for the manufacture and distribution of antitoxin and other biological products for use in the control of communicable diseases by the Michigan Department of Health. This act allows the activities of the Biologic Products Division to be extended.

An important factor in the decrease of routine laboratory examinations during the past year is the increasing number of municipal and private laboratories established throughout the state. Where such laboratories exist, very little work is sent to the state laboratories except, perhaps, blood for Kahn reaction, cultures for virulence test or specimens on which special work is wished. This development is a welcome one, however, as the chief aim of

the laboratories of the Michigan Department of Health is to act as a guide in new methods and procedures in laboratory diagnosis, a clearing house for technical problems and a leader in research work.—C. C. Y.

POLIOMYELITIS

There has been an undoubted increase in the number of cases of poliomyelitis reported in the last two months and, while there appears to be no immediate cause for alarm, the fact remains that the increase has been general and marked throughout many parts of the United States. The number of cases reported so far this year in Michigan are as follows:

Month	1927	1926
January	8	1
February	1	3
March	4	3
April	0	2
May	0	4
June	3	3
July	7	2
August	31	16
September	98	27
October		34
November		7
December		5

This makes for the first nine months of 1927 a total of 152 cases as compared to 61 during the corresponding period of 1926.

There are always a few cases of sporadic poliomyelitis reported. It is unusual for a month to go by without a few cases, but the active season for the disease seems to be always in the late summer and early fall so that the increase in number of cases reported is seasonal but considerably higher than usual. If the disease follows its usual course, the number of reported cases will decrease with the onset of cold weather.—W. J. V. D.

CHILD HYGIENE

Field work for the month of September, 1927, was delayed until the week of September 12, as the workers were needed to assist at the Better Babies' Contest conducted by the Michigan Department of Health at the State Fair. Two hundred and thirteen babies were given a complete examination at this time. Literature was given to mothers, and exhibits were shown demonstrating the method of giving sun baths to babies.

The following activities have been in progress the balance of the month:—

Little Mothers' League Classes have been held in the following counties:—

Otsego, Montmorency, Ottawa, Iosco and Alcona.

Number of classes organized, 51; total attendance at classes, 3,034.

It is interesting to note in connection with Little Mothers' League Classes, that requests have been received from several schools in Iosco County for classes in child hygiene for boys, similar to Little Mothers' League classes for girls. This is the first request of its kind, and seems to be a step forward.

Women's classes have been conducted by Dr. Rhoda Grace Hendrick and Miss Charlotte Ludington in Antrim and Kalkaska Counties. The interest has been good in spite of interruptions due to county fairs, and poor weather, the attendance being 495.

The Maternal Mortality Study continues, and has been conducted in the following counties by Dr. Florence H. Knowlton:—

Wayne, Ingham, Kent, Emmet, Mackinac, Chippewa, Cheboygan, Alpena, Presque Isle.

Number of visits to doctors, 39; number of visits to hospitals, 6; miscellaneous, 2.

At the request of Dr. C. H. Peabody, President of the Ionia and Montcalm County Medical Society, a preschool clinic will be put on by the Michigan Department of Health in Ionia County, the week of October 24th. Preschool clinics have been discontinued as a regular part of the activities of the department, except when a request is made by the County Medical Society.

The Prenatal Nursing program continues in Emmet County with a total number of visits made—118.

Grand Traverse County is now having a similar service, and Miss Sylvia Krejci has been loaned to the county for a period of approximately one year. Her work began the middle of September, and she has already called on all the physicians in the county, and has made the following visits:—

Prenatal, 63; postnatal, 2; doctors, 22; infant and preschool children, 29; miscellaneous, 26.—L. R. S.

MOUTH HYGIENE

The director of the Bureau of Mouth Hygiene spent the last two weeks of September in the upper peninsula, visiting Escanaba, Iron Mountain, Powers, Marquette, Negaunee, Ishpeming, Houghton, Hancock,

Painesdale, Lake Linden, Calumet, Ironwood and Wakefield.

Talks were given before noonday clubs, parent teacher associations, high school assemblies, dental societies, and combined meetings of dentists and physicians. In a number of places demonstration dental examinations were made of selected elementary grades in the presence of the superintendent, school nurses, teachers and board members. Mouth conditions found were more or less typical of those in the average school room, with one or two exceptions. In two second grade rooms 95 per cent of the children had cavities, and eight out of nine had mouth infection from abscessed teeth.

LABORATORY NOTES

During the past year we have repeatedly had called to our attention that groups of children showed variations in the percentages that were made immune by three doses of toxin-antitoxin. Investigation of some of these reports have indicated that the failure to immunize was due to improper handling of the toxin-antitoxin mixture after it left the laboratory.

For instance, 3000 doses of lot 31A were sent to one health department. The material was divided, part of it was used by one group of nurses and physicians, part by another group. Upon re-Schicking the groups, one showed 80 per cent immunity, the other 40 per cent immunity. Inoculations, as indicated, were given from the same lot of material. A retest of our samples at the laboratory showed the material to be potent and without deterioration.

There can be only one conclusion, that through some accident, part of the lot had been heated or in some way exposed to conditions that changed its potency.

Reports coming in on the number of children immunized with scarlet fever toxin and the number Dick tested indicate that there is a waste of material in administering these tests and treatments. Scarlet fever products are enormously expensive in that the testing can only be done on volunteer human beings. Great care should be exercised by physicians to protect our production of these biologics.

The commissioner of health wishes to call attention of the medical profession to the possibility of tularemia in Michigan. Although there have been no cases reported in Michigan it might easily be present in the rural districts. The work of Dr. Francis should be more widely known. Hygienic Laboratory bulletin No. 130 gives the scientific background of this new disease.—C. C. Y.

PREVALENCE OF DISEASE

September Report

Cases Reported

	August 1927	September 1927	September 1926	Av. 5 Years
Pneumonia	122	206	112	154
Tuberculosis	447	305	509	484
Typhoid Fever	88	74	129	146
Diphtheria	212	229	370	419
Whooping Cough	674	564	517	459
Scarlet Fever	298	343	321	447
Measles	103	50	78	111
Smallpox	59	55	12	38
Meningitis	3	8	6	7
Poliomyelitis	31	88	27	69
Syphilis	1,424	1,549	1,198	1,177
Gonorrhea	940	771	987	1,085
Chancroid	13	13	11	13

CONDENSED MONTHLY REPORT

Lansing Laboratory, Michigan Department of Health

September, 1927

	+	—	+—	Total
Throat Swabs for Diphtheria				811
Diagnosis	21	346		
Release	59	176		
Carrier	2	201		
Virulence	4	2		
Throat Swabs for Hemolytic Streptococci				394
Diagnosis	53	173		
Carrier	8	160		
Throat Swabs for Vincent's	24	342		366
Syphilis				5783
Wassermann		1		
Kahn	998	4752	31	
Darkfield		1		
Examination for Gonococci	147	1398		1545
B. Tuberculosis				337
Sputum	68	237		
Animal Inoculations	3	29		
Typhoid				433
Feces	12	118		
Blood Cultures	5	218		
Widal	6	60		
Urine		14		
Dysentery				79
Intestinal Parasites				42
Transudates and Exudates				167
Blood Examinations (not classified)				132
Urine Examinations (not classified)				273
Water and Sewage Examinations				754
Milk Examinations				98
Toxicological Examinations				11
Autogenous Vaccines				
Supplementary Examinations				187
Unclassified Examinations				609
Total for the Month				12021
Cumulative Total (fiscal year)				37207
Decrease over this Month last year				1573
Outfits Mailed Out				15373
Media Manufactured, c.c.				342130
Antitoxin Distributed, units				17902000
Toxin Antitoxin Distributed, c. c.				38390
Typhoid Vaccine Distributed, c. c.				6290
Silver Nitrate Ampules Distributed				5848
Examinations Made by the Houghton Laboratory				1495
Examinations Made by Grand Rapids Laboratory				4493

EDITORIAL DEPARTMENT

EDITOR: Frederick C. Warnshuis, M. D., F. A. C. S.

ADDRESS ALL COMMUNICATIONS TO THE EDITOR—1508 G. R. NAT'L BANK BLDG., GRAND RAPIDS, MICH.

Two Day Clinic by the Department of Post Graduate Medicine, University Medical School

University Hospital, Ann Arbor, November 18-19, 1927

The Department of Post Graduate Medicine of the University of Michigan tenders to the members of the Medical Profession of the State the following Two-Day Medical and Surgical Post Graduate Clinic. This Clinic is a contribution, by the Faculty to the Program of post graduate instruction conducted by the Michigan State Medical Society.

PROGRAM

Friday, November 18, 1927

9:00 to 9:30—
Registration at University Hospital.

SURGICAL CLINICS

9:30 to 12:00—
Dr. Hugh Cabot:
(1) Cholecystectomy.
(2) Nephrectomy.
Dr. Frederick Coller:
(1) Thyroidectomy.
(2) Gastroenterostomy or Gastrectomy.
Dr. Carl Badgley:
The Surgical Treatment of Ununited Fractures.
Dr. Carl Eberbach:
A clinic in Genito-Urinary Surgery.
Dr. John Alexander:
(1) Phrenocostomy in Pulmonary Tuberculosis.
(2) Thoracoplasty in the Treatment of Bronchitis.

OTOLARYNGOLOGY

Dr. R. B. Canfield—Surgical Clinic.
Dr. A. C. Furstenberg—Surgical Clinic.

OPHTHALMOLOGY

Dr. Walter Parker—Surgical Clinic.

ORAL SURGERY

Dr. C. J. Lyons—Hare Lip and Cleft Palate.

INTERNAL MEDICINE

10:30 to 12:00—
Dr. L. H. Newburgh (Metabolism Laboratory):
(1) Demonstration of Apparatus used in the Study of Nutritional Problems.
(2) Discussion of Treatment and Demonstration of Diets in Diabetes Mellitus and Obesity.
Dr. Frank N. Wilson (Heart Station):
(1) The Equipment and Apparatus used in Electrocardiographic Studies.
(2) Informal discussion.
Doctors C. C. Sturgis, R. Isaacs, M. Smith (Simpson Memorial Institute):
(1) The More Recent Methods in the Differential Diagnosis and Treatment of the Anaemias.

ROENTGENOLOGY

Dr. P. M. Hickey (X-ray Laboratory):
(1) Demonstration of the Orthodiagraph in Cardiac Measurements.
(2) Demonstration of Plates of Non-Tuberculous Diseases of Chest.
(3) Demonstration of Plates of Gastric Causes.
Dr. E. A. Pohle (X-ray Laboratory):
(1) Demonstration of Dessication and Electro-coagulation in the Treatment of Malignant Diseases.
(2) Demonstration of the Clinical Application of Diathermy.

12:30 to 2:00—Luncheon—University Hospital.

AFTERNOON SESSION

Pathological Amphitheatre

2:00—Clinical Pathological Conference.
Doctors A. S. Warthin and C. Weller.

HOSPITAL AMPHITHEATRE

2:00—The Treatment of Hyperthyroidism.
Dr. Frederick Coller.
2:30—The Treatment of Delayed Union and Ununited Fractures. Dr. Carl Badgley.
3:00 to 5:00—The Medical, Neurological, Dermatological, Roentgenological, Pathological and Surgical Aspects of Endocrine Disease with Special Reference to Classification, Diagnosis and Treatment.
Doctors Newburgh, Camp, Wile, Hickey, Warthin and Peet.
6:30—Dinner—Michigan Union.
Address—Dr. D. C. Balfour of the Mayo Clinic, Rochester, Minn.
Following Dr. Balfour's address there will be a discussion of medical problems by members of the Faculty and officers and members of the State Medical Society.

SATURDAY MORNING

Hospital Amphitheatre

10:00—Clinic, Surgical Diseases of the Stomach.
Dr. D. C. Balfour.

AFTERNOON

Football game at Stadium—
Michigan versus Wisconsin.

MINUTES OF THE EXECUTIVE COMMITTEE OF THE COUNCIL SEPTEMBER 30, 1927

1. The monthly meeting of the Executive Committee of the Council was held in Grand Rapids, September 30, 1927 at 6:15 p. m.

Present—Chairman Stone, B. R. Corbus, J. D. Bruce, President H. E. Randall and the Secretary-Editor.

Guy L. Kiefer, State Commissioner of Health and G. Van Amber Brown, President of the Wayne County Medical Society were present by invitation.

2. President Brown of Wayne County presented in detail a request for financial support to secure the listing of members of the Wayne County Medical Society in the Detroit telephone directory. An extended discussion of such a project was followed by the adoption of the following motion made by Dr. Corbus and supported by Or. Bruce:

> "That the amount of $1.50 per member be appropriated to the Wayne County Medical Society for the defraying of the expense of publishing a Wayne County Medical Society membership listing in the Detroit Telephone Directory."

3. The Secretary read a request from the Editor of the Wayne Hospital Bulletin. This was laid on the table until the January Council meeting.

4. The resignation of Dr. E. C. Taylor as a member of the Medico-Legal Committee was read and on motion of Dr. Corbus, supported by Dr. Bruce, was accepted.

5. President Randall nominated Dr. J. G. R. Manwaring of Flint as a member of the Medico-Legal Committee to succeed Dr. Taylor. On motion of Dr. Bruce, supported by Dr. Corbus the nomination was confirmed and the Secretary directed to so advise Dr. Manwaring.

6. On motion of Dr. Corbus, supported by Dr. Bruce, the Secretary was directed to subscribe for a copy of the Medical History of Illinois for the use of our History Committee.

7. The Secretary reported upon the Post Graduate Conferences that were held in September and those scheduled for October. Dr. Bruce announced the dates of November 18 and 19 for the two days University Hospital Clinic at Ann Arbor.

8. In compliance with the following action of the House of Delegates:

> "To that end does the Council recommend that you authorize appointment by the President, confirmed by the Council, of a Special Legislative Commission, of five members, directed by the Secretary and advised by the Executive Committee of the Council. That this Legislative Commission be charged to conduct such an educacational campaign, and prepare a suitable bill for introduction in the Legislature and that the Council be authorized to appropriate the requisite funds."

President Randall presented a list of nominees to constitute the "Legislative Commission." After discussion the following "Legislative Commission" was appointed on motion of Dr. Corbus, supported by Dr. Bruce:

Guy L. Kiefer, Lansing, Chairman; J. H. Sundwall, Ann Arbor; J. B. Jackson, Kalamazoo; J. E. McIntyre, Lansing; C. T. McClintic, Detroit, Secretary-Editor—Ex-Officio.

9. Adjourned at 9:30 p. m.

F. C. Warnshuis, Secretary.

WHAT CHARACTERIZES THE TRUE PHYSICIAN?

1. The education of the true physician is attested by the degree of Doctor of Medicine from some worthy institution of learning.

2. His moral, ethical and professional standing is attested by his membership in his county, state and national medical associations.

3. His standing as a man (or woman) and as a citizen is attested by precisely the same standards applicable to others.

4. His legal standing should be attested by his license to treat the sick. Unfortunately, this license means little in many states.

5. The true physician never practices, never recognizes and never connubiates under any circumstances whatsoever with those who practice sectarian or secular medicine, fads or curealls of any sort.

6. He considers the patient rather than the disease, and he utilizes all proved knowledge and any or all proved methods in the treatment of his patients.

7. He recognizes that every patient—and every human being for that matter—needs advice calculated to avoid and prevent health dangers, to correct existing troubles and to prevent their repetition or progress.

8. He knows that the infirmities of the body, mind and soul are inseparably linked

together so as to require all that science, art and personality can bring to bear in the patient's behalf. He renders what he can of these services and he delegates the others wisely.

9. He understands that no one person can know or practice to the best advantage all phases of the great field of medicine and health; and, therefore, whenever indicated and feasible, he asks other physicians for the assistance he needs.

10. He either maintains or has contacts that insure adequate consultation, laboratary, X-ray, nursing, hospital and all other services necessary for the welfare of his patients.

11. He follows the moral code of his profession, which insures confidential, sympathetic, consecrated service to his patients in such volume and at such times and in such places as are provided.

12. Like any other servant, he is entitled to a just compensation, but again he follows that provision of his ethics that entitles his patient to service at a compensation entirely consistent with his ability to pay.

13. He neither indulges in nor permits personal puffery. When his name is seen in the public press, it is usually as the author of some dignified statement about the condition of some patient whose welfare is a matter of public concern. More rarely he may give an authorized interview or write an article for public information on some health subject. He relies for the growth of his own clientele on the influence of the ever-widening circle of those friends whom he has served.

14. If older and more experienced, he is ever extending the helping hand to the worthy younger men of his profession. If a younger man, he is upholding the prestige of those already established. He is always interested in and helpful to worthy members of the ever-enlarging groups of assistants he must utilize to render the best to his patients.

15. He will admit that the best medical education is often inadequate and he will endorse the statement of Hippocrates that experience is fallacious and judgment difficult. But he feels that physicians are the only persons even remotely prepared by education and training for leadership in matters pertaining to improvement of health, the limitation of disease and the treatment of the sick.

16. He contributes, when he can, to medical literature, attends and takes an active part in medical society meetings and subscribes to and reads good medical journals. He thoroughly examines and carefully studies his patients, and he always makes written records of his findings. He is never boastful or inclined to discuss his patients with others. He never guesses; when in doubt, he says so, and invites consultation or assistance. He realizes his responsibilities and approaches his problems with the humility, seriousness and earnestness of purpose that ever characterizes the servant of God, of man and of science.

How does your doctor measure by this standard, and do his fellow physicians call him for illness in their families or for consultation when they are puzzled?

—William E. Musgrave in Hygiea, May, 1927.

GRAPE FRUIT THERAPY

Editor of The Journal:

An article in the October Journal on the "Therapeutic Value of Hill-Grown Grape Fruit" has caused considerable comment. Many physicians throughout the state have written in, asking for a verification of statements contained in this article, in many instances saying that they have had the article brought to their attention by patients. The article may be deemed as being quite revolutionary so far as our present knowledge of diabetes goes. Certainly, such a diet used by the layman and undirected by his physician has possibilities of harm. Because of the general interest in the article, the Publication Committee has instructed me to make some comment on it.

While it is generally known that The Journal does not hold itself responsible for opinions expressed through its columns, the Publication Committee feels that there is an obligation on the part of the Editor to assemble all information possible upon subjects of unusual interest and importance. This seems especially obligatory where claims are made dealing with the use of unknown remedies in such important conditions, as, for example, those discussed in this paper. The Publication Committee has no comment to make other than to express its hope for the successful fulfillment of this enthusiastic presentation. At the same time, it is but fair to state that had the committee been consulted, it would have delayed the publication of this article until a more thorough trial had been given the remedy in question. This must not be interpreted as implying any doubt of the good faith of the authors but simply to safeguard the reputation of The Journal and in accordance with well established methods in the consideration of new procedures and remedies.

One of the most prominent workers in the field of Metabolism in this country states, "So far as I know, there is no value to grape fruit other than any other fruit

save that the percentage of carbohydrates in grape fruit is a trifle lower than in other varieties."

To clear up any possible error and in an effort to confirm the findings of Doctor Taylor and his associates, the Publication Committee has taken the liberty of asking two recognized authorities in this field to undertake to check their findings. As the doctor has drawn attention to a particular kind of grape fruit, it would seem best, if he wishes to accept this offer, that he supply his own product for the experiment. This would seem an unusual opportunity for Doctor Taylor to obtain confirmation, which I am sure he earnestly desires.

The Publication Committee feels that this subject should be thoroughly investigated and we are hoping that Doctor Taylor will see fit to avail himself of this opportunity.

The Publication Committee,
by James D. Bruce, M. D.

POST-GRADUATE CONFERENCES

During October four Post-Graduate Conferences were conducted for our members. All of them evidenced that our members welcome these educational opportunities for the interest and attendance has been very commendable. The following subjects were included in these four Conferences:

Post-Graduate Conference, 11th District
Shelby, Michigan
September 29, 1927

10:15 a. m.—Opening Remarks.
—George L. Le Fevre, Councilor.
10:30 a. m.—Some Diseases of Animals Communicable to Man.
—Professor Ward Giltner, Lansing.
11:00 a. m.—Urinary Hemorrhages.
—L. M. McKinlay, M. D., Grand Rapids.
11:30 a. m.—Diagnosis of Gall Bladder Infections.
—Burton R. Corbus, M. D., Grand Rapids.
12:00 m. —Luncheon—Parish House.
1:30 p. m.—Treatment of Anemias.
—Burton R. Corbus, M. D., Grand Rapids.
2:00 p. m.—Urethal Infections.
—L. M. McKinlay, M. D., Grand Rapids.
2:30 p. m.—The Training of Medical Biologists.
—Professor Ward Giltner, Lansing.
3:00 p. m.—Diabetes.
—Wm. L. Le Fevre, M. D., Muskegon.
3:30 p. m.—The Value of X-ray Studies in Obstetrical Cases.
—H. S. Collisi, M. D., Grand Rapids.

Post-Graduate Conference, Marquette, Michigan
Wednesday, October 12, 1927
County Court House

10:00 a. m.—Opening Remarks.
—Richard Burke, Councilor.
10:30 a. m.—Peptic Ulcer and Its Medical Treatment.
—B. R. Corbus, M. D., Grand Rapids.
11:00 a. m.—Arterial Hypertension and Its Management.
—M. A. Mortensen, M. D., Battle Creek.
11:30 a. m.—Infections of the Kidney.
—B. C. Corbus, Chicago.
12:00 m. —Luncheon—Informal Remarks by Dr. B. R. Corbus, Vice-Chairman of the Council.
1:30 p. m.—Management of Various Forms of Heart Disease.
—M. A. Mortensen, M. D., Battle Creek.
2:00 p. m.—Diathermy in Urology.
—B. C. Corbus, Chicago.
2:30 p. m.—Pernicious Anemia and Its Treatment by Liver Administration.
—B. R. Corbus, M. D., Grand Rapids.

Post-Graduate Conference, Alpena, Michigan
October 20, 1927
New Alpena Hotel

10:30 a. m.—Drugs Useful in Gastro Intestinal Diseases.
—W. H. Marshall, M. D., Flint.
11:00 a. m.—Pelvic Infections.
—G. Van Amber Brown, M. D., Detroit.
11:30 a. m.—Infant Feeding.
Wm. N. Braley, M. D., Detroit.
12:00 m. —Luncheon will be served by the Alpena County Medical Society in the New Alpena Hotel. Remarks by State President Randall of Flint.
1:30 p. m.—Acute Lesions of the Abdomen.
—H. E. Randall, M. D., Flint.
2:30 p. m.—Fever in Children from Obscure Causes.
—Wm. N. Braley, M. D., Detroit.
3:00 p. m.—Heart Lesions with Focal Infections.
—Wm. H. Marshall, M. D., Flint.
3:30 p. m.—Fractures.
—H. E. Randall, M. D., Flint.
4:00 p. m.—Any member desiring to present a case or case record will be accorded the opportunity.

Eighth Councilor District
Post-Graduate Clinical Conference, Saginaw
September 29, 1927
St. Mary's Hospital

(Eastern Standard Time)
Presiding—J. H. Powers, M. D., Councilor—8th District.
10:30 a. m.—Contagious Diseases.
—Guy L. Kiefer, M. D., Lansing.
11:00 a. m.—Treatment of Urithritis.
—R. E. Cummings, M. D., Detroit.
11:30 a. m.—Nasal Respiratory Infections.
—R. E. Mercer, M. D., Detroit.
12:00-1:30—Luncheon.
1:30 p. m.—Pulmonary Medialstinal Examinations.
—R. E. Mercer, M. D., Detroit.
2:00 p. m.—Hemorrhages from Urinary Tract.
—R. E. Cummings, M. D., Detroit.
2:30 p. m.—Obstetrical Problems.
—Harold Henderson, M. D., Detroit.
3:00 p. m.—Arterial Hypertension and Its Management.
—M. A. Mortensen, M. D., Battle Creek.
3:30 p. m.—Sterility in Women.
—Harold Henderson, M. D., Detroit.
4:00 p. m.—Management of Various Forms of Heart Disease.
M. A. Mortensen, M. D., Battle Creek.

MEDICAL GUIDANCE

Experiences evoke study and investigations. The analysis of such studies and investigations constitute the foundation of a policy which is developed in time to an accepted procedure that is applied daily. Such a circle characterizes the development and institution of many of our established methods. If one delves into the facts it becomes apparent that the practices that we now acknowledge were initiated by inquiries, study and discussion by individuals who were concerned by reason of personal encounters.

We sense quite strongly that we are at the present time confronting the formative period of a new movement that will in the process of evolution establish an accepted policy or procedure with which physicians and medical organizations cannot help but be intimately concerned—a movement that will eventually solve a very moted question as to how a lay person may be able to select and secure competent medical advice and attendance. How he may obtain proper medical guidance.

We have noted, over a period of time, that with increasing frequency this question is being raised and discussed in leading magazines and before district and national meetings of lay, health and medical classification. The writers and speakers have been lay as well as medical. The pertinent question stands out: "How may a lay person determine who are competent physicians and how can they obtain assurance that they will receive services reflecting present day medical knowledge." Editorial writers are raising the same query. One editor advised us that not a day passes but what his office receives several such telephone inquiries. It is a problem presenting itself most pressingly for solution. We must assume that leadership. That is the reason we are inviting the attention and consideration of our members in order that their opinions may be utilized to reach a right solution.

One suggestion is receiving considerable thought—local and district Medical Guidance Bureaus, where individuals may obtain dependable advice as to whom they can consult. This suggestion has much merit, still it is fraught with several valid objections so that the administration of such a Bureau can not now be outlined as to principles, policies or limitations. It must be experimented with and its possibilities closely and carefully investigated. We understand the Wayne County Medical Society has created some such Bureau and the people of Detroit are accorded the opportunity of applying to this Bureau for medical guidance. We purpose keeping close touch with their experiences.

Publicity as to what constitutes the qualifications of a dependable doctor in order that the lay person may ascertain whether their medical advisor is possessed of those general or special qualifications has also been suggested. This at once raises the question as to who shall certify to a doctor's qualifications and appraise his capabilities or limitations. Mere membership in his County and State Society or affiliation with a hospital staff is at present a rather unreliable classification. To be effective it is necessary that in some manner, jealousy and personalities be submerged, and qualifications and appraisals be intrusted to a board constituted from the membership. Such a Board to be invested with quite arbitrary authority. In seeking to educate the public, medical society memberships may be well stressed as a fundamental requirement in judging a doctor's qualification and distinguishing between the fake, quack, charlatan or cult and the reputable doctor. We believe such a plan of public education is worthy, possesses merit and should be instituted. The public should be informed that the member of a County Medical Society has conformed to certain educational, legal and personal requirements and having done so he is entitled to confidence.

In order to ascertain and observe the value of such public education our State Society has joined with the Wayne County Medical Society in causing a special list of its members to be published in the next issue of the Detroit telephone directory. Such a special listing of the members of the Wayne County Medical Society will be preceeded by a statement to the public that these members are possessed of certain basic qualifications that certify to their professional attainments. Such a list will enable the layman to at least discriminate between the reputable men and the quack or cult.

What the value of such a means of education will be cannot be fully stated. It has been deemed to possess sufficient merit to warrant a trial. Such a trial has been instituted in Detroit.

We are disinclined to believe that medical guidance should be delegated to civic or state health officers. We believe it to be a problem to be studied, handled and solved by our medical organizations and

that civic and state officers should not undertake its solution or execution.

The individual has a right to ascertain where and from whom he can obtain competent medical advice. Conditions of society have so changed that he can no longer depend upon the recommendation of a friend, employer, directory, lodge member or newspaper advertisement as to whom he may best consult for his particular physical condition and have the assurance that he is in safe hands. The individual consequently is seeking for reliable medical guidance. We as a profession must create and make available an avenue through which he can secure that information. We solicit your recommendations so that your officers may formulate a policy.

OSTEOPATHS AND OPIUM

Treasury Department
Bureau of Prohibition, Washington

Editor of The Journal:

Please refer to your letter of October 14, 1927, addressed to the Secretary of the Treasury, which has been referred to me for reply, concerning the matter of the registration of osteopaths in the State of Michigan under the Harrison Narcotic Law, as amended.

In accordance with your understanding, the United States District Court for the Eastern District of Michigan, Southern Division, on September 26, 1927, handed down a decision in the case of Walter P. Bruer v. Fred L. Woodworth, Collector of Internal Revenue, holding in effect that the Collector of Internal Revenue was compelled to grant registration under the Harrison Law to the realtor, Walter P. Bruer, described as "a duly licensed osteopath physician under the laws of Michigan." The issue in this case appeared to be whether or not the realtor, Walter P. Bruer, who had been licensed as an osteopath under the laws of Michigan was lawfully entitled to distribute, dispense, give away or administer narcotic drugs to patients upon whom he, in the course of his professional practice was in attendance, and a determination of this issue appeared to depend upon whether an osteopath under the Michigan laws was a physician within the meaning of the state statute known as Act No. 92, approved April 26, 1923, (Public Acts Michigan 1923, page 123), for it seems clear that unless an osteopath is construed to be a physician within the meaning of that statute, he may not sell, dispense, prescribe or distribute narcotic drugs to his patients without becoming liable to the penalties provided in that act and therefore could not be considered as lawfully entitled to dispense, distribute, etc., narcotic drugs within the meaning of Section 1 of the Act of December 17, 1914, known as the Harrison Narcotic Law, as amended.

This office, in making an examination of the state licensing statutes, one of which provides for the examination, regulation, licensing and registration of "physicians and surgeons" and another provides for the examination, licensing and registration of "osteopathic practitioners," respectfully disagreed with the United States District Court in its decision. It was thought that where separate licensing acts deal in one case with "physicians and surgeons," and the other case "osteopathic practitioners," and where the state statute known as the Act of April 26, 1923, provided exceptions in favor only of a physician duly qualified to practice, that the latter act did not contemplate the use of narcotic drugs by osteopaths. This office can not, and does not attempt to, discriminate between the different schools of medicine, but it is considered that a duty is imposed upon the Collectors of Internal Revenue to determine the status of any alleged school of medicine within the state with reference to state narcotic laws before members of a particular school may be granted registration under the Harrison Narcotic Law, as amended. In this connection this office adopts the viewpoint of the Supreme Court of Idaho in a decision rendered March 31, 1923, in State v. Sawyer, 214 Pac. 222, wherein the court held in part

> "If it be true that graduates of colleges of osteopaths possess the requisite knowledge and skill to enable them to prescribe medicine and surgery, it would suggest the propriety of bringing the facts to the attention of the legislature with a view of obtaining legislative action granting to osteopathic physicians, upon proper examination, the right to practice medicine and surgery as well as osteopathy."

Accordingly this office requested Assistant United States Attorney Aldrich of Detroit, Michigan, to obtain a stay of execution of the order in the Bruer case and to endeavor to obtain a review of this decision in the United States Circuit Court of Appeals. Pending such review, if obtainable, it was desired to withhold registration from osteopaths in Michigan until the Circuit Court of Appeals passed upon

the question. No reply has yet been received from the Assistant United States Attorney.

It is hoped that this will answer your inquiry, and upon the final determination of the question, you will be further advised if you so desire.

Respectfully,

J. M. Doran, Commissioner.

BRIEF ON THE MICHIGAN LAW REGARDING THE PRESCRIBING OF NARCOTICS BY OSTEOPATHS

The question submitted is whether or not an osteopath duly licensed to practice osteopathy under the laws of Michigan is entitled to dispense and prescribe narcotic drugs to his patients. This question will necessarily be determined in the light of the present narcotic and osteopathic laws of Michigan.

The basic law regulating the sale and distribution of narcotics in Michigan was passed as Act No. 92 of the Public Acts of Michigan, 1923. Several sections of this act were amended by Act No. 9 of Public Acts of Michigan, 1925. These amendments are not, however, pertinent to the question here in issue. Section 1 of Act No. 92 of the Public Acts of Michigan, 1923, makes it unlawful to sell, give away, dispense or distribute any opium or coca leaves, their compounds, preparations, etc., "except as hereinafter provided." Section 4 allows the sale of narcotics "upon a written prescription or order of a *physician, veterinarian or dentist* duly qualified to practice under the laws of this state . . . ". Section 5 allows the sale of narcotics "to any such manufacturer, jobber, wholesale druggist, pharmacist, druggist or to any lawfully practicing *physician, veterinarian or dentist,* but only upon a written order duly signed by such manufacturer, jobber, wholesale druggist, pharmacist, druggist, *physician, veterinarian or dentist, . . .*"

There is nothing in the above provisions which would indicate that osteopaths are licensed to prescribe narcotics . No mention is made of osteopaths whatsoever. Section 4 and section 5 of the Act goes greatly into detail in an attempt evidently to state exactly each and every person that would be included within the exception to this act.

The narcotic act is a general prohibition effective against every person, corporation, business, partnership, etc., and prohibiting such persons or organizations from dealing in any way with any of the specified narcotics. This general prohibition is then qualified by specifically exempting certain classes of persons. The exempted classes are given in great detail, so much in detail that the words "*wholesale* druggist", were used in addition to the words "pharmacist,, and druggist." By analogy, if the legislature had intended that any special and limited physicians should have the right to prescribe narcotics, it would have named them: if osteopathic physicians were to be included the legislature would have said physicians and osteopathic physicians. This detailing of the classes included within the exception to this general prohibition serves to show that the act received the careful and intensive detailed consideration of the legislature at the time it was being enacted into law.

Th legislature, at the time it was considering this act, was fully cognizant of the existing osteopathic act and knew the various provisions of that act. The legislature, therefore, knew that the words "osteopathic physician" was used in that act to describe a practitioner of osteopathy. In face of this knowledge the words "osteopathic physician" were not included in section 4 and 5. It is to be assumed that the legislature, since section 4 and 5 were developed in such minute detail, would have included the words "osteopathic physician" if they intended that the osteopathic physician should have been given the right to use and prescribe narcotics in his professional practice. The fact that the words osteopathic physician, was not included in such a minutely detailed provision would serve to indicate that the legislature did not intend to confer upon the osteopathic physician the right to prescribe or dispense narcotics. The narcotic act is a statute of a penal nature, imposing either a fine or imprisonment for the violation of its terms. It is a common recognized principle of construction that penal statutes must be strictly construed and that the words used must be given their popular rather than technical meaning. This rule of construction has been upheld in:

People v. Webb, 127 Mich. 32.
Young v. Moore, 162 Mich. 63.
Deloria v. Atkins, 158 Mich. 232.

Under the rules of strict construction of penal statutes we cannot read the words "osteopathic physician" into a statute of a penal nature and, especially, where such a statute shows on its face the careful, deliberate and intensive consideration of the legislature.

Section 7 of the Narcotic Act of Michigan provides:

"Section 7.—Nothing in this act contained shall be construed to forbid or regulate the dispensing or distribution of any of the drugs mentioned in section one of this act by or under the instruction of a lawfully practicing *physician, dentist or veterinarian* in the course of his professional practice, and not for the purpose of evading the provisions of this act."

A careful consideration of this provision will serve but one interpretation. It is clear that the provision was included in the act in order to make certain that nothing within the narcotic act itself should in any way effect the status of the power of "lawfully practicing *physicians, dentists or veterinarians*" in the dispensing or prescribing of narcotics. If the word "physician" in sections 4 and 5 is construed to include "osteopathic physician" the same consruction must be applied in sections 7 of the same act.

Applying this construction, section 7 would provide that the power of "physician," including "osteopathic physicians," shall not be changed by this narcotic act. In other words, in order to determine the question of the right of an osteopath to prescribe narcotics we must resort to the provisions of the osteopathy law itself and ascertain from them what is authorized as the practice of osteopathy.

The basic law governing the practice of osteopathy is found as Act 162, Laws of 1903. This original act was amended in some respects by act 305 of the laws of 1913. Section 4 of the act of 1903 as amended provides:

"Section 4.—The certificate provided for in section two of this act shall entitle the holder thereof to practice osteopathy in the state of Michigan *in all its branches as taught and practiced by the recognized colleges or schools of osteopathy,* but it shall not authorize him to practice medicine within the meaning of Act

237 of the Public Acts of 1899, or acts amendatory thereto; . . . "

The portion italicized was added by amendment by Act 305 of the Laws of 1913. Osteopaths were therefore authorized to engage in such practice as was taught and practiced by the recognized colleges and schools of osteopathy, at the time the amendment took effect. No other construction can be placed upon this provision.

If an attempt is made to interpret this provision as authorizing such practice at this time as is practiced and taught by *present day* schools of osteopathy the act would of necessity be unconstitutional. If such had been the intention of the legislature it would have amounted to an attempt to delegate legislative powers to private concerns and individuals existing in many instances outside of the borders of the state. No legislature has authority or power to delegate any of its legislative functions to private individuals. On the other hand if they interpret this provision as was first suggested, namely, that the provision authorizing osteopaths to indulge in such practice as was taught by the schools of osteopathy at the time the act went into effect, we would not run foul of such objections. Inasmuch as the courts are unanimous in interpreting statutes wherever they can in such a way as to give them constitutionality and validity and since the wording in this case would clearly adapt itself to such construction we are of the opinion that the only construction that can be placed upon this phrase *is that the practice authorized is the practice as taught and practiced by recognized colleges or schools of osteopathy at the date that this act went into effect.*

The foregoing construction was upheld by the court in the case of State vs. Bonham, 93 Wash. 489. In this case the court was called upon to construe a provision of the Washington osteopathy law which was identical in wording to the provision of the Michigan law. The Washington court held:

"But if all of the osteopathic colleges were now teaching the administration of medicines and the resort to surgery by the knife as a means of curing diseases, it would not aid the appellant. His right is to practice osteopathy as that practice was understood at the time the medical act was adopted, and this we conclude did not sanction the practice resorted to by him in the treatment of the patient mentioned in the information."

The question then arises as to whether or not the recognized schools or colleges of osteopathy taught and practiced the administration of narcotics as a part of the teaching and practice of osteopathy *in 1913, the time when the amendment authorizing practice as taught and practiced in the recognized schools of osteopathy was introduced into the osteopathy law.*

In studying the catalog for 1914-1915 of the Chicago College of Osteopathy no courses can be found which provide for the study of the administration and effect of drugs of any kind. Osteopathy is defined as:

"A complete system that represents an eternal principle by maintaining that the bodily forces are all sufficient ,if only rightly directed; for nature alone can repair a tissue or heal a wound." (Page 11, catalog of the Chicago College of Osteopathy, 1914-1915).

On page 18, of the catalog of the College of Osteopathic Physicians and Surgeons of Los Angeles, California for 1914-1915, the practice of osteopathy is described as follows:

"From the foregoing, it will be observed that there is a fundamental difference between Osteopathy and all other systems of healing. Osteopathy is founded on the eternal truth that each individual lives by means of his own bodily activities and will continue to live in a state of health just so long as his body is able to adapt itself to the external influence surrounding it. When adaptation fails and disease arises the Osteopathic physician appeals to no charms; does not try to drive demons out with nostrums; *knows too much about physiology to administer a cause of more disease in the form of a poison;* takes out none of the pieces of which the human body—the most wonderful of all machines—is composed; nor is he so devoid of human sympathy and common sense that he can say to himself "The suffering of others is imaginary."

In the case of Bragg vs. State, 134 Ala. 165 an osteopathic physician was prosectued for practicing medicine without a certificate from the State Board of Medical Examiners. The case was heard upon an agreed statement of facts which contained the following recital:

"The method of treatment by the practitioners of osteopathy is a system of manipulation of the limbs and body of the patient with the hands, by kneading, rubbing, or pressing upon the parts of the body. *In the treatment, no drug, medicine, or other substance is administered or applied, either internally or externally;* nor is the knife used or any form of surgery resorted to in the treatment. The practitioner himself performs the manipulations. The teaching and theory of those skilled in osteopathy are that it is a system of treatment of disease by adjustment of all the parts of the body mechanically. It is taught that any minute or gross derangement of bony parts, contracting and hardening of muscles or other tissues, or other mechanical derangements of the anatomical parts of the body which must be in perfect order mechanically in order that it may perform its function aright, nerve centers, arteries, veins, and lymphatics, which must function properly in order that health may be maintained. It is taught that such interferences lend to congestion, obstructed circulation of blood and lymph, irritation of nerves, and abnormal state of nerve centers; that the result is disease which can be cured only by righting what is mechanically wrong. * * * The essential things taught in the schools of osteopathy are anatomy, physiology, hygiene, histology, pathology, and the treatment of diseases by manipulation. *The repudiation of drugs and medicine in the treatment of diseases is a basic principle of osteopathy, and a knowledge of drugs or medicine, their administration for the cure of diseases, the writing and giving of prescriptions, are not essential to the graduation of, and the issuance of diplomas to, students of osteopathy.*"

Webster's New International Dictionaries for 1914 and 1916 defined the practice as:

"A system of treatment based on the theory that diseases are chiefly due to deranged mechanism of the bones, nerves, blood vessels, and other tissues, and can be remedied by manipulations of these parts."

In Funk & Wagnall's New Standard Dictionary of the English language for 1916 osteopathy is defined as:

> "*A system of treating diseases without drugs,* pronounced by Dr. A. T. Still in 1874. It is based on the belief that disease is caused by some part of the human mechanism being out of proper adjustment, as in the case of a misplaced bone, cartilage, or ligament, adhesions or contractions of muscle, etc., resulting in unnatural pressure on or obstruction to nerves, blood or lymph. Osteopathy, through the agency or use of the bones (especially the long ones which are employed as levers), seeks to adjust correctly the misplaced parts by manipulation."

In the Century Dictionary and Cyclopedia for the year 1915 and 1916 the practice of osteopathy was defined as:

> "A theory of disease and a method of cure, advocated by Dr. A. T. Still, resting on the supposition that most diseases are traceable to deformation of some part of the skeleton (often due to accident), which by mechanical pressure on the adjacent nerves and vessels interferes with their action and the circulation of the blood. As a remedy a form of manipulation is used."

From the above quotations it is to be seen that osteopathy in 1913 did not consider the use of drugs as a part of their practice. It follows that the practice authorized by the osteopathy law would not include the practice of administering and prescribing drugs and narcotics. *It is clear then that the osteopathic law as it exists today does not authorize a practitioner of osteopathy to dispense or prescribe drugs or narcotics.*

MONTHLY COMMENTS

Medical—Economic—Social

Volume One, Number One of the Annals of Internal Medicine, published by the American College of Physicians under the editorship of Dr. A. S. Warthin of Ann Arbor, has been received. This new publication will be the official organ of the College of Physicians.

A handy booklet of 64 pages giving preparations of the U. S. P. and N. F. has been compiled by a joint committee of Detroit druggists and members of the Wayne County Medical Society. Doctors W. A. Donald, H. A. Luce, W. H. McCracken, J. T. Watkins, I. Werness, R. McKean and F. J. Slayden represented the doctors. The following introduction well describes the purpose of this excellent piece of educational work:

The purposes in presenting this booklet are:

1. To direct attention to the newer and more important drugs and preparations listed in the tenth revision of the United States Pharmacopoeia and the fifth edition of the National Formulary.
2. To present in an easily available form some information concerning these remedies that may be useful to the busy physician in writing prescriptions.
3. To strengthen the mutual confidence, understanding and harmony that exist between physician and pharmacist.
4. To encourage general prescribing of the U. S. P. and N. F. pharmaceuticals.

The Pharmacopoeia is produced by the joint efforts of the physicians and pharmacists of the nation. The items of the U. S. P. X., numbering about 623, were chosen for inclusion by a committee comprised of 17 physicians and 6 pharmacists.

The National Formulary is produced and published by the American Pharmaceutical Association. Many of the items included have been official in earlier revisions of the Pharmacopoeia. The other items it describes are a number of drugs and preparations which, although never official in the Pharmacopoeia, are nevertheless so frequently prescribed by physicians as to require official standards and formulas.

We urge that the physician, in formulating prescriptions, give serious consideration to the U. S. P. and N. F. articles which may be suited to his purposes and that he specify them whenever they are the equal of, or are superior to, other available remedies.

In making this appeal we are prompted by the following considerations:

1. The official drugs and preparations, numbering about 1,400, are sufficiently varied in therapeutic activity to offer a remedy meeting the requirements of almost every case.
2. Seventeen of the 23 members of the committee that chose the medicinal materials to be admitted to the U. S. P. X. were physicians. Similarly, physicians have controlled admissions to the earlier revisions of the Pharmacopoeia, and, directly or indirectly, they have approved the contents of the National Formulary. In consequence of this we have every reason to believe that the official pharmaceuticals are judiciously chosen, that they possess dependable therapeutic value, that they are not fads but are rational remedies of demonstrated worth.
3. Official formulae have been established on the sole basis of medicinal merit and pharmaceutical excellence. The prescriber knows the exact composition of each preparation and therefore may exercise control over incompatibilities.
4. The official drugs and remedies are commonly available among the pharmacies. Non-official preparations are not so readily obtainable. Prescriptions for the former are, therefore, likely to be decidedly advantageous to the patient in points of convenience, time and cost.
5. The use of Pharmacopoeial and National Formulary Latin titles (or their official abbreviations) on prescriptions reduce to a minimum the likelihood of self-medication by patients.
6. The U. S. P. X and the N. F. V have been produced at very considerable expense in effort, money, thought and painstaking care. They are strictly medical and pharmaceutical in their interests. They are our books—physician's and pharmacist's. Let us make use of them to the fullest.
7. Careful diagnosis suggests the reasonableness of rational treatment. Non-secret remedies,

as none other, permit of logical choices and enable the prescriber to exercise his fund of hard-gained knowledge. We need only mention the personal satisfaction, the ethical propriety and the enhanced professional standing that are concomitants of consistent U. S. P. and N. F. specifications.

We feel that this booklet will be of material assistance to the physician in choosing remedies and suggest that it be kept about his desk for quick reference. Whereas only a selected portion of the official remedies are described at some length, the therapeutic classification (p. 46) shows in a suggestive way the usefulness of most U. S. P. and N. F. preparations.

It is hoped that these introductory comments and all contents of the booklet will be received with a sincerity, a disposition to mutual aid and a sympathetic attitude equal to those with which they are submitted.

President Randall and the Executive Committee of the Council have designated the following members to constitute our Legislative Commission:

Guy L. Kiefer, Lansing, Chairman; J. E. McIntyre, Lansing; J. B. Jackson, Kalamazoo; C. T. McClintic, Detroit; John Sundwall, Ann Arbor.

By action of the House of Delegates this Commission will study medical legislation and formulate a new medical practice act. The Commission's findings and recommendations will be imparted in The Journal from time to time.

It was our privilege to attend the Annual Meeting of the Indiana State Medical Association in Indianapolis on September 28th. We were impressed by the alert and manifest interest of its House of Delegates and the exemplary activity during the year of the permanent committees. Indiana's profession is accomplishing a real task in its campaign of newspaper publicity that is educating the public in regard to scientific medicine. The concerted influence of the profession also secured the passage of a new medical law last winter that bids well to limit cult activity and trespass into the fields of medicine by under-educated physicians. We have always obtained inspiration and guidance from the methods utilized by the Indiana Medical Association and are appreciative of having had the opportunity of meeting these medical leaders.

In two issues we imparted the local medical society's conclusions and recommendations following five years of contact with the Milbank Health Demonstration in Cattarangus County, N. Y. This was a lay experiment conducted by lay persons. The profession of the county were not used even in an advisory capacity. We cited the report and commented upon a health unit or health program that did not enlist the aid and advice of doctors. We learn that in some counties our comment has caused local doctors to hold aloof and oppose the work of our State Department of Health in organizing County Health Units. Such an attitude is unwarranted in Michigan. Our State Commissioner of Health purposes to be guided by the advice of the doctors and invites them to join in the work of a County Health Unit. We commend the State Commissioner's program and policy and earnestly urge every possible co-operation on the part of local physicians.

What is your recommendation as to how best acquaint the public in regard to how they may ascertain how to secure the services of a competent medical advisor. How can we organize or establish Bureaus of Medical Guidance? How can we arouse a medical conscience that will cause individuals not to undertake to advise or treat conditions for which they have not been especially trained in supervising? These are pressing questions. We are desirous of obtaining the opinions of our members. Will you not please forward yours?

You had a physical examination one year ago. You are due to receive another one before January first. Have you arranged for it? In counties where the local society conducted these examinations we urge the officers to plan for another physical examination of their members. Your health and longevity depends upon having such an examination. Do not delay or neglect doing so.

Members are invited to send to the Secretary such suggestions and recommendations that they feel are pertinent and bearing upon how best we may amend or re-write Michigan's medical practice act. Our newly created Legislative Commission is undertaking a study of the problem of forming a new practice act that will assure to the people that all those who hold themselves out as being capable to treat the sick or give dependable health advice have had proper fundamental training. This comission is desirous of obtaining the views and opinions of our members for the furtherance of its work.

We have received several requests regarding the date for our next Annual Meeting. This is to be determined by the Council at its January meeting, consequently we are unable to impart definite information at this time. The place of meeting is in Detroit. The Wayne County Medical Society has appointed a local committee on arrangements. It is purposed to prepare a program that will exceed all previous efforts and will insure a most intensely interesting Annual Meeting.

On another page will be found the program for the two-day Clinical Conference that is being tendered to the profession of Michigan by the University Post-Graduate Department and the members of the University faculty. It is the University's additional contribution to the Post-Graduate work that the State Society is conducting for its members. It represents work and time on the part of the faculty for which we are highly appreciative. We urge our members to avail themselves of this opportunity. The program affords clinics and discussions in every branch of medicine and surgery. No one can attend and return without receiving direct, personal benefit. Note the dates on your engagement book. A notice with a reservation card will be mailed to you about November 5th. Please return the card promptly as it is very important that the University officials know the number that will attend in order to perfect their plans and arrangements. Sign and mail the card the day you receive it.

Dr. Burr, Chairman of our Historical Committee reports excellent progress in the compila-

tion of Michigan's Medical History. Dr. Burr is still "howling" for illustrative material giving actual pictures of pioneer physicians. Especially is he anxious to secure a photograph of a physician on horseback with saddle-bags and other equipment. We again urge our readers to search through their files and to send to Dr. Burr such a picture. Surely somewhere in Michigan there must exist a picture of a pioneer physician on horseback. Dig into your closets or ask the "old timers" in your town whether they do not have such a picture in the old family album.

OUR OPEN FORUM

Affording Opportunity for Personal Expression

MEDICO-LEGAL COMMITTEE

Editor of The Journal:

Your notification of my appointment to the Medical Legal Committee recently was received and I accept the appointment.

I do that very willingly because I understand Dr. Tibbals does all the work.

Sincerely,

J. B. Manwaring.

NEW LOCATION

Editor of The Journal:

I am moving my office and residence to Niles, Mich. Would be pleased to have you make a note of same in your next issue of The Journal, or if too late for the November issue the December issue will do.

Also please send The Journal to my Niles address after this. You certainly are getting up a wonderfully fine and up-to-date Journal. Please accept my congratulations.

With best wishes for its continued success, I remain,

Sincerely yours,

N. A. Herring.

LEGISLATIVE COMMISSION

Editor of The Journal:

In reply to yours of October fifth, I desire to say that I shall be very happy to serve on the Legislative Committee and shall do everything within my power to obtain the ends desired.

With the assurance of my continued esteem and regards, I remain,

Yours very sincerely,

C. F. McClintic.

NEW JOURNAL

Editor of The Journal:

The American College of Physicians announces changes in the administration of its official Journal. Heretofore, it was known as Annals of Clinical Medicine and was published for us by the Williams and Wilkins Company of Baltimore, Md. On July 1, 1927, The College determined to publish its Journal directly, and changed the name to ANNALS OF INTERNAL MEDICINE.

The Journal will be issued monthly, and new volumes will start each year with the July number.

Our editor has already established exchange with you, and you will receive, therefore, our Journal, Annals of Internal Medicine, each month as published. Kindly send the copy of your Journal to our editor, Dr. Alfred Scott Warthin, University of Michigan, Ann Arbor, Michigan, U. S. A.

Due to the changes in publication, we have been delayed in getting out our new volume, which started with the July number. However, that number is now in the mail, and the August and September numbers will follow as promptly as possible. By November, our new Journal will be on schedule, and you will receive it regularly.

Very respectfully yours,

E. R. Loveland,
Executive Secretary.

LEGISLATIVE COMMISSION

Editor of The Journal:

Yours of October 5th received and in reply will state that I will be very pleased to accept President Randall's appointment on the Legislative Commission, if I can be in any way helpful in putting our ideals across. Dr. Randall talked with me about the matter after the state meeting and that was one of the reasons I spent so much time in Minnesota and Wisconsin investigating their basic science law. The more I study the problem the more I realize the difficulties of our problem. However, I do hope we may construct something really worth while.

Thanking you for your letter and with my kindest personal regards, I am

Cordially yours,

J. E. McIntyre.

LEGISLATION COMMISSION

Editor of The Journal:

In reply to your communication of November 25th permit me to state that I shall be glad to serve on the Legislative Commission of the Michigan State Medical Society. I feel that it is a real honor to serve on this Committee.

Most sincerely yours,

John Sundwall, M. D.

THE HIGHLAND PARK PHYSICIANS CLUB

Editor of The Journal:

The Highland Park Physicians Club is to give its Second Annual Clinic on December 1, 1927 at the Highland Park General Hospital. The Clinics take in the whole day starting at 9 a. m. and ending at 10:30 p. m. Luncheon will be served by the Highland Park General Hospital.

The dinner will be served from 6:30 to 8 p. m. The evening program starts promptly at 8:30 p. m. and will end promptly at 10:30 p. m.

The following men are to take part in our program:

Dr. Hugh Cabot, Ann Arbor, Dean and Professor of Surgery of the University of Michigan Medical School, will give a clinic on "Urology."

Dr. F. N. G. Starr of Toronto, Ont., Surgeon of Toronto General Hospital will give a clinic on "Cancer of the Stomach."

Dr. Kenneth G. Blackfan of Boston, Mass., Professor of Pediatrics and chief in Pediatrics at the Massachusetts General Hospital will give a clinic and medical aspect of "Poliomyelitis."

Dr. Edwin W. Ryerson of Chicago, Ill., an orthopedic surgeon will give a clinic and surgical aspect of "Poliomyelitis."

Dr. Jas. B. DeLee of Chicago, Ill., Professor of Obstetrics of the University of Illinois Medical School will give a clinic on "Obstetrics."

Dr. George Wilson of Toronto, will give a clinic on "Fractures."

Dr. Jacob J. Singer of St. Louis will give a clinic on "Tuberculosis."

Dr. Millard F. Arbuckle of St. Louis, Professor of Oto Laryngology at Washington University Medical School, will talk on the Relationship of Oto-Laryngology to General Practice.

A detailed program will be mailed each member of the Michigan State Medical Society as soon as they are completed.

Our last clinic is now history, but we still hear favorable comment. We are planning to make this one better, so mark the date on your book, and enjoy the day with us.

Chas. J. Barone, Secretary.

WAYNE COUNTY MEDICAL SOCIETY

Editor of The Journal:

On Tuesday night, November 8th at 8:15 p. m., Dr. H. B. Lewis, A. B., Ph. D., Professor of Physiological Chemistry, University of Michigan, will deliver an address in the Club Rooms, Maccabee Bldg., 5057 Woodward avenue on "Recent Studies on the Role of Protein in Nutrition."

Academically, Dr. Lewis is exceptionally equipped. An A. B. and Ph. D. of Yale, he did graduate work in Physiological Chemistry at that University under Professors Chittenden and Mendel. He was assistant at his Alma Mater 1911 to 1913, instructor University of Pennsylvania Medical School 1913 to 1915, and from 1915 to 1922 was in turn associate-assistant professor and associated professor at the University of Illinois. Since then he has been Professor of Physiological Chemistry at the University of Michigan Medical School, where he has made an enviable reputation.

Dr. Lewis is a member of A. A. A. S., American Physiological Society, American Society of Biological Chemistry, and Experimental Society of Biological Medicine of New York. Nor is he a stranger in the literature of his specialty—he has had 60 papers, mainly on metabolism and sulphur and amino acids, published in American Journal of Biological Chemistry.

Wayne County Medical Society is fortunate in being able to have a physiologist of Dr. Lewis' caliber address its members. He has a spectacular platform manner—Billy Sunday. He speaks entirely without notes and in a language that a freshman can thoroughly understand. The lecture will be of the greatest interest to the entire profession, and promises to be comparable to anything Wayne County Medical Society has heard in some time. A comparative stranger in local medical circles, Dr. Lewis' address will lose none of effectiveness on that account, rather should the members consider themselves fortunate in being able to make the acquaintance of an authority in such an important specialty.

NEWS AND ANNOUNCEMENTS

Thereby Forming Historical Records

The following appointments to the State Board of Registration in Medicine were made by Governor Fred W. Green on October 8th, the term of the appointments being from September 30th, 1927, to September 30th, 1931:

Dr. Frank A. Kelly, Detroit; Dr. J. D. Brook, Grandville; Dr. S. Edwin Cruse, Iron Mountain; Dr. William H. Marshall, Flint, and Dr. A. B. Smith, Grand Rapids.

At the bi-annual meeting of the Board of Registration in Medicine, which was held at Lansing, Mich., October 12, 1927, Dr. George L. LeFevre, Muskegon, was elected President and Dr. Guy L. Connor, Detroit, was elected Secretary of the Board; terms to extend for two years from the date of the meeting.

DEATHS

DR. W. DONALDSON HART

Dr. W. Donaldson Hart of Almont died at his home, on October 9th. Dr. Hart was born in Almont, and after his graduation from a medical college took up his practice in this city.

DR. LEO H. HERBERT

Dr. Leo H. Herbert, 3964 Lafayette Blvd., Detroit, died September 24th of cerebral hemorrhages after an illness of only two days. Dr. Herbert practiced medicine for the past twenty-five years, and also was well known as a chess player. He is survived by his widow and three children.

DR. LLOYD C. THOMAS

Dr. Lloyd C. Thomas, 644 Rivard Blvd., Grosse Pointe Village, died September 29th. He was a lifelong resident of Detroit and for twenty years a practicing physician. His death was attributed to heart disease. Dr. Thomas has been a member of the Michigan State Medical Society since 1912. He is survived by his wife, two sons and a daughter.

COUNTY SOCIETY ACTIVITY

Revealing Achievements and Recording Service

KENT COUNTY

The Kent County Medical Society was especially honored by the visit of the Travel Club of the Surgical Section of the Royal Society of Medicine of the British Empire, which visited Grand Rapids on September 9 and 10. The Travel Club consisted of twenty-five distinguished surgeons, not only from England and the British Provinces, but also from Spain. The Section was touring Canada and the United States during the month of September. Their schedule consisted of Quebec, Montreal, Toronto, Chicago, Rochester, Grand Rapids, Detroit, Cleveland, Baltimore, Philadelphia and New York. The Kent County Medical Society arranged a program of entertainment and clinical demonstrations for the two days of their visit.

The following program was given:

FRIDAY, SEPTEMBER 9

Clinics at Blodgett Memorial Hospital:—

"Demonstration of Plastic Surgery"—
Dr. F. N. Smith.

"Thyroidectomy in Toxic Goitre"—
Dr. H. J. VandenBerg.

"Osteomyelitis"—Dr. John T. Hodgen.

"Operative Gynecology"—
Doctors A. M. Campbell and P. W. Willits.

"Demonstration of Treatment of Intracapsular Fracture of Femur"—Dr. J. N. Holcomb.

"Discussion and Demonstration of Modern Methods of Anesthesia"—Dr. Reuben Maurits.

"Preparation of Diabetic Patients for Surgery, and After Care"—Dr. Merrill Wells.

Medical Clinic, Grand Rapids Clinic:—

"Essential Hypertension"—Dr. William Northrup.

"Bronchial Asthma, Complicated by Lung Abscess"—Dr. William R. Vis.

"Cholecystography: Seventy Operative Cases"—
Doctors T. O. Menees, L. E. Holley and Wm. German.

"Cerebral Hemorrhage in the New-born"—
Dr. T. D. Gordon.

Luncheon, Blodgett Hospital.

The following program was given in the evening, after a banquet at the Kent Country Club:

Opening of Meeting by V. M. Moore, M. D.,
President, Kent County Medical Society.

Address of Welcome—Hon. Edwin F. Sweet,
Formerly Assistant Secretary of Commerce.

Response—A. H. Burgess, Esq., F. R. C. S.

"Organized Medicine in America"—
F. C. Warnshuis, Secretary, Michigan State Medical Society.

"Recent Advances in the Treatment of Pernicious Anemia"—Cyrus C. Sturgis, M. D.,
Simpson Memorial Institute for Medical Research, Ann Arbor, Michigan.

SATURDAY, SEPTEMBER 10

Clinic at St. Mary's Hospital:—

"Prostatectomy Under Spinal Anesthesia"—
Dr. L. W. Faust.

"Thyroidectomy"—Dr. W. A. Hyland.

"Cholecystectomy After Drainage"—
Dr. W. H. Veenboer.

"Removal of Ovarian Cyst"—Dr. P. L. Thompson.

"Pathological Demonstrations"—Dr. G. L. Bond.

Clinic at Butterworth Hospital:—

"Two Cases of Haemolytic Jaundice"—
Dr. M. A. Miller.

"Chronic Arthritis, Amytoxyl Treatment"—
Dr. J. C. Foshee.

"Tumor of Brain, Operation"—Dr. A. J. Baker.

"Use of X-Ray in Diagnosis of Pregnancy"—
Dr. H. S. Collisi.

"Two Cases of Acrodynia"—Dr. F. J. Larned.

In the afternoons the members of the Travel Club and their wives were entertained with motor trips to the Getz farm and various resorts on Lake Michigan.

The Kent County Medical Society resumed their regular meetings September 28.

H. T. CLAY, Secretary.

GOGEBEC COUNTY

A paper on "Recent Developments in the Diagnosis and Treatment of Tuberculosis" was read by Dr. W. C. Reineking, Superintendent of the Gogebic County Tuberculosis Sanatorium, on September 9 in a regular meeting of the Gogebic County Medical Society. The paper was illustrated by X-ray stereopticon pictures and was probably one of the most interesting and instructive papers ever presented to this society. An invitation was submitted from the Gogebic Range Dental Association to attend a supper and lecture on "Mouth Hygiene and Preventive Dentistry," by Dr. Wm. R. Davis of the Michigan Department of Health on September 29 at the Curry Hotel in Ironwood. It was resolved to become associated with the Upper Peninsula Medical Association. President P. R. Lieberthal reported that in a meeting of the Board of Directors with representatives of the Rotary Club, the American Legion and the Iron National Bank it was decided to equip a nursery in the Grand View Hospital as a memorial to Dr. E. B. Stebbins of Ironwood, who lost his life July 15 through acute dilatation of the heart after being rescued from drowning.

Louis Dorpat, Secretary.

HOUGHTON COUNTY

I desire to submit report of regular monthly meeting of Houghton County Medical Society.

Regular monthly meeting of Houghton County Medical Society was held Tuesday evening, September 6th. at 8 p. m. at the Copper County San-

atorium, Houghton, Michigan, upon invitation from Dr. George MacL. Waldie, Physician in Charge of Sanatorium.

Dr. Alex B. McNab, of Baltic, Mich., who has been our Secretary-Treasurer since first of year, resigned, because of his leaving for a new location. His future location will be at Cassipolis, Mich., for the present.

Dr. T. P. Wickliffe of Lake Linden, Mich., was elected to succeed Dr. Alex McNab, as Secretary-Treasurer for remainder of year.

Other routine business being taken care of, the Society adjourned its business session and Dr. Waldie, presented several hundred X-ray slides of chest, demonstrating all stages of tuberculosis, and had three slides of "Carcinoma of Lung."

This scientific exhibit and talk by Dr. Waldie was enjoyed very much by all, and a vote of thanks was offered by Society for this unusual instructive lecture.

Following this exhibit and lecture, the Society was delightfully served a sumptuous lunch by the culinary department of the Sanatorium, and the opinion of every member is that if our lunch was a sample of what the patients get, all of them will soon be on the road to speedy recovery.

Next meeting will be held at Calumet, Mich.

Thanking you, I remain very truly yours,

T. P. WICKLIFFE, Secretary.

SHIAWASSEE COUNTY

The October meeting of the Shiawassee County Society was an open meeting addressed by Health Commissioner Dr. Guy L. Kiefer. The meeting was well attended by both the profession and laity, and the address was given an attentive hearing.

Dr. Kiefer took up the several departments of the State Health Commission, describing their several functions and importance. He also pointed uot the many advances that had been made in the science and art of public health work. He stressed the importance of periodic health examinations, and strongly urged that they be carried out by all present, doctors as well as laymen.

Prophylactic inoculations he urged the importance of, explaining each in its order, especially stressing that pertaining to diphtheria, owing to the fact that Michigan has many more cases of this disease than some other states where toxin-antitoxin is used more generally.

At the close of the meeting an informal discussion was held among the wives of the doctors, lead by Mrs. Kiefer, as to the advisability of instituting a women's Auxiliary to the county medical society, but, notwithstanding the earnest presentation of the idea by the leader, no formal action was taken.

W. E. WARD, Secretary.

WAYNE COUNTY

Program for November, 1927

November 1

General meeting. Subject—What the General Practitioner May Expect from the Intelligent Use of Physiotherapy. Professor John S. Coulter, Northwestern Medical College, Chicago. (Representing Dr. Mock, Chairman of the Council on Physical Therapeutics of the American Medical Association.

November 8

Medical Section. Chemistry of Digestion. Professor Howard Lewis, M. D., University of Michigan Medical School, Ann Arbor, Mich.

November 15

General Meeting. Surgical Treatment of Pulmonary Tuberculosis. (Illustrated with lantern slides). E. J. O'Brien, M. D., Detroit.

November 22

Entertainment. Annual Feather Party. Charge of Entertainment Committee.

November 29

Surgical Section. Differential Diagnosis of Common Pelvic Diseases. (Illustrated with lantern slides). C. Hollister Judd, M. D., Detroit.

EATON COUNTY

The monthly meeting of the Eaton County Medical Society will be held Thursday evening, October 27 at the Charlotte hotel. Dinner will be served at p. m., E. S. T. Dinner "Dutch".

Following this Dr. G. F. Bauch will address the Society on "Some Interesting European Clinics Observed while on his Trip Abroad."

This meeting promises to be very interesting and we will expect a good attendance. Don't fail us.

Very truly yours,

H. J. Prall, Secretary-Treasurer.

SEVENTEENTH ANNUAL CLINICAL CONGRESS OF THE AMERICAN COLLEGE OF SURGEONS

The Seventeenth Annual Clinical Congress of the American College of Surgeons was held in Detroit, October 3, 4, 5, 6 and 7. This is the first meeting of the college to be held in the motor city. There was a registration of over 2,600. Clinics were held daily in the following hospitals: Harper, Providence, Henry Ford, Children's, Woman's, St. Mary's Michigan Mutual, Jefferson Clinic, Grace, St. Joseph's Mercy (Ann Arbor), Detroit Receiving, University Hospital (Ann Arbor), St. Joseph's Mercy (Detroit), Evangelical Deaconess, Highland Park General.

The headquarters were at the Book-Cadillac and Statler hotels. The evening meetings and clinical demonstrations in the afternoon were held in Orchestra Hall. A large public health meeting of interest to the laymen was held in Masonic Temple on Thursday evening, October 6. The Annual Convocation was held in Orchestra Hall on Friday evening, October 7.

The following Michigan men were made Fellows:

John Alexander, Ann Arbor; Alfred L. Arnold, Jr., Owosso; Carl E. Badgerly, Ann Arbor; George J. Baker, Detroit; Robert H. Baker, Pontiac; George Van Amber Brown, Detroit; Thomas J. Carney, Alma; James D. Crane, Ishpeming; Albert S. Crawford, Detroit; George J. Curry, Flint; Hampton P. Cushman, Detroit; Edward C. Davidson, Detroit; Charles R. Davis, Detroit;

John Bosworth Dibble, Detroit; Robert Howard Ann Arbor; Isaac S. Gillert, Detroit; R. John Fraser, Battle Creek; Albert C. Furstenberg, Hardstaff, Detroit; Voss Harrell, Detroit; Wilfrid Haughey, Battle Creek.

The program for the evening meetings, held in Orchestra Hall at 8:15 p. m., was as follows:

Presidential Meeting—Monday, October 3rd

Address of Welcome—Alexander W. Blain, M. D., Chairman of Committee on Arrangements.

Address of Retiring President—Walter W. Chapman, M.D., F.R.C.S. (Edin.), Montreal.

Introduction of Foreign Guests.

Inaugural Address—George David Stewart, M.D., New York.

The John B. Murphy Oration in Surgery—Sir John Bland-Sutton, Bt., LL.D., M.D., F.R.C.S., London.

Lister Centenary—Tuesday, October 4th

Presentation of the Replica of the Lister Exhibit in the Wellcome Historical Medical Museum, London, Henry S. Wellcome, Esq., London.

Presentation of the Lister Tablet to the American College of Surgeons—Horace G. Wetherill, M. D., Monterey, California, in behalf of the Western Surgical Association.

Some Personal Recollections of Lord Lister—William Williams Keen, M. D., Ph. D., LL.D., F.R.C.S., (Eng., Edin., Ire.) Philadelphia.

Lister's Influence on Present Day Surgery—William J. Mayo, M. D., Rochester, Minnesota.

Remarks by Sir John Bland-Sutton, Bt., LL.D., M.D., F.R.C.S., London, England.

Wednesday, October 5th

Howard C. Taylor, M. D., New York—Treatment of Carcinoma of the Uterus.

Professor Gustaf E. Essen-Moller, Lund, Sweden—One Thousand Laparotomies for Myoma Uteri.

Professor S. E. Gammeltoft, Copenhagen, Denmark—Heart and Pregnancy.

John Osborn Polak, M. D., Brooklyn—Fibroids in Pregnancy and Labor.

Thursday, October 6th

C. Jeff Miller, M. D., New Orleans—Management of Chronic Endocervicitis.

Robert Gordon Craig, M.B., Ch.M., Sydney, Australia—Hydatid Disease of the Kidney.

George P. Muller, M.D., Philadelphia—Suppurative Diseases of the Chest.

Convocation—Friday, October 7th

Conferring of Honorary Fellowships.

Presentation of Candidates for Fellowship.

Presidential Address—George David Steward, M. D., New York.

Fellowship Address.

Among the outstanding papers of interest was an address by Dr. W. W. Keen of Philadelphia, a nestor of American Surgery, one of the first on the continent to use Lord Lister's methods. Dr. Keen is now 91 years of age. His paper and wonderful voice was clearly heard by all in the Orchestra Hall.

The following Clinical Demonstrations in Surgery were presented:

Tuesday, 9:00 a. m.—Statler Hotel

David H. Ballon, M.D., C.M., Montreal—Diagnostic Value of Lipiodol in Broncho-Pulmonary and pleural Lesions.

Samuel Iglauer, M.D., Cincinnati—The Advantages of Brominized Oil in Bronchography in Tuberculous Patients.

Hubert A. Royster, M.D., Raleigh, North Carolina—Appendicitis.

2:30 p. m.—Orchestra Hall

George W. Crile, M.D., Cleveland—Cases of Gall-Bladder Disease.

Eugene H. Pool, M.D., New York—Lesions of the Large Intestine.

Hugh H. Young, M.D., Baltimore—Progress of Antisepsis in Urology.

Wednesday, 9:00 a. m.—Statler Hotel

Elmer Hess, M.D., Erie, Pennsylvania—Tuberculosis of the Kidney.

Leonard G. Rowntree, M.D., Rochester, Minnesota—Cardiovascular Complications.

Frank H. Lahey, M.D., Boston—Surgery of Gastric and Duodenal Ulcers.

2:30 p. m.—Orchestra Hall

J. M. T. Finney, M. D., Baltimore—Speaking of Operations.

Ernst A. Sommer, M. D., Portland, Oregon—Treatment of Acute Traumatic Joints.

John B. Deaver, M. D., Philadelphia—Ulcers of the Stomach.

Thursday 9 a. m.—Statler Hotel

Lilian K. P. Farrar, M. D., New York—Carcinoma of the Cervix and Applications of Radium.

Barton Cooke Hirst, M. D., Philadelphia—Different Types of Caesarean Section.

Vilary P. Blair, M. D., St. Louis—Ankylosis of the Jaw; Correction of the External Appearance, as Well as Ankylosis.

Robert S. Cathcart, M. D., Charleston, S. C.: Massive Sarcoma of the Breast.

CANCER SYMPOSIUM

Thursday 3 p. m.—Orchestra Hall

Report of Progress and of Prospect—Robert B. Greenough, M. D., Boston, Chairman of the Committee on the Treatment of Malignant Diseases with Radium and X-ray.

The Lead Treatment of Cancer—Henry J. Ullman, M. D., Santa Barbara, Cal.

Report on the Results of High Voltage X-ray Treatment in Cancer—William A. Evans, M. D., Detroit.

The Use of Radium in the Treatment of Uterine Pathology—Irvin Abell, M. D., Louisville Histological Estimation of the Malignancy of Tumors—A. Compton Broders, M. D., Rochester, Minn.

Analysis of 1,500 Applications for the Saunders Cancer Prizes—George A. Soper, Ph. D., New York, Managing Director, American Society for the Control of Cancer.

SURGERY OF THE EYE, EAR, NOSE, THROAT AND MOUTH

Tuesday, 9 a. m.—Statler Hotel

Don M. Campbell, M. D., Chairman

Symposium—Brain Abscess and Tumor.

Professor Dr. G. Alexander, Vienna, Austria; Choked Labyrinth and Its Importance in Diagnosis and Indications in Brain Tumor.

Joseph C. Beck, M. D., Chicago—Brain Abscess and Tumor from the Standpoint of the Otologist and Rhinologist.

Alfred W. Adson, M. D., Rochester, Minn.—Brain Abscess and Tumor from the Standpoint of the Neurological Surgeon.

W. I. Little, M. D., Rochester, Minn.—Views of Importance of Eye-Ground Examination and Fields of Vision.

H. P. Cahill, M. D., Boston—Brain Abscess of Otitic or Nasal Origin.

Discussion opened by J. Milton Robb, M. D., Detroit.

Wednesday, 9 a. m.—Statler Hotel

George E. Frothingham, M. D., Chairman

Symposium—Standardization of Special Departments for Eye, Ear, Nose and Throat Patients in General Hospitals. See detailed program under Hospital Conference.

Thursday, 9 a. m.—Statler Hotel

Burt R. Shurley, M. D., Chairman

Symposium—Plastic Surgery of the Face.

Vilray B. Blair, M. D., St. Louis—Plastic Surgery of the Face.

Discussion by Walter R. Parker, M. D., Detroit; Ferris Smith, M. D., Grand Rapids, and Chalmers J. Lyons, M. D., Ann Arbor.

Edmund B. Spaeth, Philadelphia—The Use of Fascia and Cartilage in Ophthalmic Plastic Surgery.

Discussion by Harry Grandle, M. D., Chicago.

Ferris Smith, M. D., Grand Rapids—Plastic Surgery of the Face.

Discussion by Robert H. Ivy, M. D., Philadelphia.

John M. Wheeler, M. D., New York—Plastic Repair or Orbit and Eyelid.

Discussion by Joseph C. Beck, M. D., Chicago, and Hermon H. Sanderson, M. D., Detroit.

C. D. Parfit, M. D., Gravenhurst, Ontario—Tuberculosis of the Larynx.

Discussion opened by Guy H. McFall, M. D., Detroit.

Friday, 9 a. m.—Statler Hotel

Walter R. Parker, M. D., Chairman

Symposium—Industrial Eye Surgery.

Sidney Walker, M. D., Chicago—Aftermath of 250 Intra-Ocular Steel Cases.

F. D. Gulliver, M. D., New York.

Plinn F. Morse, M. D., Detroit.

Don M. Campbell, M. D., Detroit.

Discussion opened by Howell L. Begle, M. D., Detroit.

The 10th Annual Hospital Standardization Conference was also held on October 3, 4, 5 and 6, bringing a large number of superintendents of hospitals, trustees, supervisors of nursing and others interested in hospitals to Detroit.

Dr. Franklin H. Martin of Chicago, President-Elect, said in a recent letter:

> "The meeting has been the most successful Clinical Congress of the American College of Surgeons that we have ever had. The meetings were handled under great difficulty because of our widely separated points of contact in our halls and in our headquarters, but everything moved with perfect harmony."

BOOK REVIEWS AND MISCELLANY

Offering Suggestions and Recommendations

A TEXT BOOK OF THERAPEUTICS, INCLUDING THE ESSENTIALS OF PHARMACOLOGY AND MATERIA MEDICA—Arthur A. Stevens, M. D., Professor of Applied Therapeutics in the University of Pennsylvania. Seventh Edition, entirely reset. Octavo of 758 pages. Cloth, $6.50 net. W. B. Saunders Company, Philadelphia and London.

Carefully revised, rewritten in several sections, new matter introduced and its former merit all cause this to be a very satisfactory text and reference work. Study and use of this book would go far in aiding for more efficient therapy and terminate useless prescribing of stock preparations.

AFFECTIONS OF THE STOMACH—Burrill B. Crohn, M. D., Associate Attending Physician, to the Mt. Sinai Hospital, New York City. Octavo of 902 pages with 361 illustrations, some in colors. Cloth, $10.00 net. W. B. Saunders Company, Philadelphia and London.

A new text dealing with a subject that has been an ever important problem to internist and surgeon. Apparently this text adequately presents the essentials requisite for a complete discussion of stomach affections. It is well written and well illustrated. Methods of examination and interpretation of findings and symptoms are clearly imparted. It covers the definite affections of the stomach quite satisfactorily.

APPLIED BIO-CHEMISTRY—Withrow Morse, Ph. D., Professor of Physiological Chemistry and Toxicology, Jefferson Medical College, Philadelphia. Second edition, revised and reset with the co-operation of Joseph M. Looney, M.D., Assistant Professor of Physiological Chemistry, Jefferson Medical College. 988 pages with 272 illustrations. Cloth, $7.00 net. W. B. Saunders Company, Philadelphia and London.

Just what its title states. If one desires to understand the practical application of the facts revealed this text will indicate the basic principles.

INFECTIOUS DISEASES AND ASEPTIC NURSING TECHNIQUE (A Hand-Book for Nurses)—Dennett L. Richardson, M. D., Superintendent of the Providence City Hospital, Providence, R. I. 12 mo. of 182 pages, illustrated. Cloth, $1.50 net. W. B. Saunders Company, Philadelphia and London.

An excellent nursing text and guide.

BRONCHOSCOPY AND ESOPHAGOSCOPY — Chevalier Jackson, M. D., Professor of Bronchoscopy and Esophagoscopy, Jefferson Medical College; Professor of Bronchoscopy and Esophagoscopy, Graduate School of Medicine, University of Pennsylvania. Second edition, reset. Octavo of 457 pages with 179 illustrations and 10 color plates. Cloth, $8.00 net. W. B. Saunders Company, Philadelphia and London.

This second edition presents a working manual written by the pioneer and master of subjects. In a clear manner the fundamentals are imparted and procedures specifically stated.

CLINICAL DIAGNOSIS BY LABORATORY METHODS (A Working Manual of Clinical Pathology)—James Campbell Todd, Ph. B., M. D., Professor of Clinical Pathology, University of Colorado, and Arthur H. Sanford, M. D., Professor of Clinical Pathology, University of Minnesota (The Mayo Foundation); Head of Section on Clinical Laboratory, Mayo Clinic. Sixth edition, revised and reset. Octavo of 748 pages with 346 illustrations, 29 in colors. Cloth, $6.00 net. W. B. Saunders Company, Philadelphia and London.

This can be appraised as probably the most helpful manual on laboratory methods in the diagnostic field. It is complete, explicit and thoroughly abreast of our present knowledge. We recommend it to our readers.

A TEXT-BOOK OF PHYSIOLOGY (For Medical Students and Physicians)—William H. Howell, Ph. D., M. D., Professor of Physiology in the School of Hygiene and Public Health, Johns Hopkins University, Baltimore. Tenth edition, thoroughly revised. Octavo of 1081 pages, 308 illustrations. Cloth $6.50. W. B. Saunders Company, Philadelphia and London.

Justifying a tenth edition in itself is ample approval of this recognized text.

A TEXT BOOK OF HISTOLOGY—F. T. Lewis, Harvard, and J. L. Brewer, Harvard. Third edition, 545 pp. P. Blakiston's Son & Co., Philadelphia.

This histology text is arranged upon an embryological basis. It contains 485 illustrations with thirty-two in color. It is clear in description and covers the subject in a manner that is thorough and complete.

BLOOD PRESSURE: ITS CLINICAL APPLICATION—George W. Norris, H. C. Bazett and T. McMillan. Fourth edition, 386 pages. Lea & Febiger, Philadelphia.

A very clearly compiled discussion of this important clinical condition enabling one to arrive at safe and sound deductions as to blood pressure findings. Its value merits this fourth edition.

EMERGENCIES OF A GENERAL PRACTICE—Nathan C. Morse and A. W. Colcord. Second edition, 541 pages. Price $10.00. C. V. Mosby Company, St. Louis, Mo.

The scope of the book is expressed in its title. The industrial surgeon will find in it much that is useful. An excellent manual for emergency operating rooms.

PHYSICAL DIAGNOSIS—Richard C. Cabot, M. D. Ninth edition, 279 illustrations, 436 pages. Price $5.00. Wm. Wood & Co., New York City.

Revised and enlarged this ninth edition of a recognized text authority is a most valuable guide and assistant to the physician seeking to interpret physical findings. It is a text one must read and study and refer to frequently. It will not be found wanting. It will be received and appraised as a most acceptable authority.

MINOR SURGERY—A. E. Hertzler and V. E. Chesky. 438 illustrations, 565 pages. Price $10.00. C. V. Mosby Company, St. Louis, Mo.

A quite satisfactory discussion of minor surgical conditions with presentation of forms of care and treatment. It is a helpful guide to the interne and young practitioner.

CLINICAL CASE TAKING—George R. Herrinaun, Tulane University. 90 pages. Price $1.50. C. V. Mosby Company, St. Louis, Mo.

An excellent guide that should be in every hospital library and interne's quarters. It tells how to make worth while clinical records.

PRACTICAL BACTERIOLOGY, BLOOD WORK AND ANIMAL PARASITOLOGY—A compendium for internists. By E. R. Stitt, Surgeon General, U. S. Navy. 835 pages. Price $6.00. P. Blakiston's Son & Company, Philadelphia, Pa.

This is quite an exhaustive and complete manual quite abreast of the subject and imparting the practical and working facts. It should be of considerable value to the laboratory worker. For the physician compelled to do most of his laboratory work it will give him much assistance and indicate the steps in technic as well as interpretation of the tests.

GONOCOCCAL INFECTION IN THE MALE—A. L. Wolbarst, M. D. Cloth, 237 pages. Price $5.50. C. V. Mosby Company, St. Louis, Mo.

A well presented discussion of the subject imparting the attitude of urologists as to modern ways of treating this venereal infection and its complications.

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